

Breastfeeding Intentions and Practices of Women in Plateau
State, Nigeria: a Cross-sectional Study of Women Attending
Antenatal Clinics in Selected Hospitals.

By

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Declaration

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Abstract

Background

Breastfeeding exclusively for the first 6 months of a child's life, and subsequently continuing to breastfeed until the child is 2 years old, potentially reduces maternal and child morbidity and mortality and has numerous benefits for mother and child. Infant feeding practices can change within a short period due to several modifiable factors.

Aim

Underpinned by the Health Belief Model, this study attempted to identify the breastfeeding practices of women and the factors that influence these practices. The study also assessed mothers' intentions to breastfeed the baby/infant following delivery of the current pregnancy.

Method/Design

A quantitative cross-sectional study was adopted. Using a validated and pilot-tested questionnaire, data was collected from 763 women across the three senatorial zones of Plateau State in Nigeria. The construct of the Health Belief Model constituted the major heading of presentation of results and discussion. Analysis was performed using simple frequency tables, measures of central tendency, and chi-squared and logistic regression.

Results

Participants came from all three senatorial districts of the state and attended both primary and secondary facilities. Analysis revealed that the women also cut across various socio-demographic characteristics. The findings show that 33.1% (n=226) initiated breastfeeding early, 91.8% (n=664) gave breast milk after birth, 84.4% (n=609) were breastfeeding at discharge or 48 hours after birth, 55.7% (n=399) fed their babies on demand and the proportion of women who were breastfeeding at one week, six weeks, twelve weeks and twenty-four weeks after delivery were 94.6% (n=629), 87.7% (n=534), 69.8% (n=409) and 46.2% (n=276) respectively. Furthermore, the exclusive breastfeeding rate for the first six months was 36.2% (n=267). Overall duration of breastfeeding was 15 months (SD±4). Most women (79.6%, n=596) anticipated that they would breastfeed the babies they were currently expecting. Some women still practiced prelacteal feeding.

Conclusion

Breastfeeding was almost universally practiced at birth and for the first few months thereafter, but tended to decline with increasing infant age. Rates of exclusive breastfeeding for six months and longer and feeding on demand were low. Socio-demographic characteristics, previous breastfeeding experience, antenatal attendance, interpersonal influence, advertisement, breastfeeding intentions, and support, among others, were identified as determinants of infant feeding in the study population.

Recommendation

Future breastfeeding interventions should focus on improving the early initiation of breastfeeding and encouraging exclusive breastfeeding for the first 6 months of the infant's life

Women need to be supported to have a positive experience with breastfeeding, as that has an impact on subsequent feeding choice.

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Dedication

I dedicate this work to God almighty and to my wife Esther and daughter Chloe.

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List of abbreviations

BFHI	Baby friendly hospital initiative
CDC	Center for disease control
FMOH	Federal Ministry of Health
HBM	Health Belief Model
MCLS	Movement for the Creation of Lowland State
MDG	Millennium Development Goals
NPC	National Population Commission
SD	Standard deviation
UNICEF	United Nations children's fund
WHO	World Health Organization
WMA	World Medical Association

Definition of terms

Artificial feeding: infant is fed only on a breast-milk substitute (UNICEF, 2013).

Breastfeeding duration: “The total period of time during which an infant receives any breast milk at all from initiation until breastfeeding has ceased completely” (Centre for community child health, 2006: 6).

Baby Friendly Hospital Initiative: The ten steps to successful breastfeeding that were initiated by WHO/UNICEF to protect; promote and support breastfeeding. It was developed to ensure that every facility provides maternity services fully practice all ten steps to successful breastfeeding (Fairbank et al 2000).

Breastmilk substitutes: any food being marketed or otherwise represented as a partial or total replacement for breast milk, whether or not it is suitable for that purpose (UNICEF, 2013).

Complementary feeding: The child receives both breast milk and solid (semi-solid or soft) foods. It is not recommended to provide any solid, semi-solid or soft foods to children less than six months of age (UNICEF, 2013).

Early initiation of breastfeeding- putting a child to the breast within one hour of birth (WHO/UNICEF, 2007).

Exclusive breastfeeding: infant receives only breastmilk (including breastmilk that has been expressed or from a wet nurse) and nothing else, except for ORS, medicines and vitamins and minerals UNICEF (2013)

Formula: Artificial milks for babies made out of a variety of products, including sugar, animal milks, soybean, and vegetable oils. They are usually in powder form, to mix with water (UNICEF, 2013).

Infant feeding practices: this comprise of breastfeeding initiation, feeding at discharge, prelacteal feeding, type of infant feeding (exclusive or nonexclusive) and duration of total breastfeeding.

International Code of Marketing of Breast Milk Substitutes –An international voluntary agreement adopted by the world health assembly to contribute to the provision of safe, and adequate nutrition for infants by the protection and promotion of breastfeeding and by ensuring the proper use of artificial foods where these are necessary (Fairbank et al 2000).

Mixed feeding: infant receives both breast milk and any other food or liquid including water, non-human milk and formula before 6 months of age (UNICEF, 2013).

Parity: the number of times a woman has delivered (Bula, 2009).

Prelacteal feeds: feeding that is given to the infant before they are put to the breast for the first time (Umar and Uche, 2013).

Socio-demographic variables- These includes age, sex, occupation, economic status, marital status

Chapter one: Introduction of the Study

1.0 Introduction

Breastfeeding is natural way of providing nutrition for an infant. Over the years, efforts have been made to protect, promote and support breastfeeding because of its numerous benefits for mother and infant. However, the exclusive breastfeeding rate in Nigeria has remained low (NPC, 2014). Understanding the factors that influence infant feeding is important in planning effective strategies that will have the greatest impact on breastfeeding.

This document is a report of research to describe infant feeding practices, breastfeeding intention and the factors that influence breastfeeding among pregnant women attending antenatal clinics in Plateau State, Nigeria. The study was underpinned by the Health Belief Model (HBM).

An overview of the study is presented in this chapter. This includes the study background, the research problem and rationale of the study, the aim of the study, the research question, the research objectives, and the significance of study. The relevant hypotheses and the scope of the study are also included in this chapter.

1.1 Background of the Study

Nigeria's progress in achieving MDGs 4 and 5 which borders on reducing child mortality and improving maternal health has been insufficient (WHO/UNICEF, 2008; WHO/UNICEF, 2013). The rate of reduction of under-five mortality in Nigeria by 2008 was estimated at 1.2% instead of the required 10.1% (WHO/UNICEF, 2008; WHO/UNICEF, 2013). This means that, if drastic measures are not put in place to accelerate this reduction, the country will be unlikely to achieve the MDG target by 2015. A current estimate reveals that 6.7% of children born in Nigeria die before the age of one year, and that 12.5% die before reaching their fifth birthday (NPC, 2014). Nigeria is currently the second highest contributor to maternal and under-five mortality worldwide (You, Bastian, et al, 2013). Nigeria is also one of the countries where there is inequality in interventions for maternal, newborn and child health (Baros, Ronsmans et al, 2012; Kayode, Adekanmbi et al, 2012). Children in the north central region of Nigeria are more likely to die before their fifth birthday than their north-eastern counterparts (Kayode,

Adekanmbi et al, 2012). Increasing the proportion of women who exclusively breastfeed could potentially reduce infant mortality.

Infant feeding is a very important aspect of ensuring the survival of young children and keeping child mortality in check (Adeyemi, 2014; Okolo, Adewunmi et al, 1999). Children who are not exclusively breastfed are exposed to diarrhoea and other infections (UNICEF, 2013). A report by UNICEF, the WHO, the World Bank and the United Nations revealed that, overall, substantial progress has been made towards achieving the Millennium Development Goal (MDG) 4, which is to reduce the number of deaths of children under five years. Under five mortality in the world has declined from 12.6 million in 1990 to 6.6 million in 2012 (WHO/UNICEF, 2013; You, Bastian et al, 2013). Globally, an estimated 750 children under the age of five years died every hour in 2012 (You, Bastian et al, 2013). Progress in achieving this goal, viz. of reducing child mortality, has however been insufficient, particularly in low-income countries like Nigeria (You, Bastian et al, 2013). Although sub-Saharan Africa has recorded a rapid reduction in child mortality, it still has one of the highest rates (98 deaths per 1000 live births); this is more than 15 times the average for developed regions (You, Bastian et al, 2013). You, Bastian et al (2013) further reported that India (22%) and Nigeria (13%) together account for 35% of all deaths of children under the age of five years.

Malnutrition is responsible for 10.5 million deaths each year, among children under five years old. Over 60% of these deaths occur in the first year of life and are closely associated with poor infant feeding practices (breastfeeding and complementary feeding practices) (WHO, 2001). Black, Morris et al (2008) posited that suboptimal breastfeeding is responsible for the death of 1.4 million children and the disability of 44 million (as a result of severe impact of disease on growth and development).

The early initiation of breastfeeding and exclusive breastfeeding are protective measures; about 16% of neonatal deaths could be prevented if all infants were breastfed from day one, and 22% could be saved if breastfeeding was started within the first hour (Edmond, Zadoh et al, 2006). This underlines the fact that breastfeeding is a vital component of child survival (Worugji and Etuk, 2005) and it is an important public health measure to protect and promote the health of infants and children (Fairbank, O'Meara et al, 2000).

The consistent reduction in exclusive breastfeeding rates around the world has necessitated the introduction of breastfeeding promotion initiatives by the WHO/UNICEF and by national governments, such as the International Code of Marketing of Breast Milk Substitutes and the Baby Friendly Hospital Initiative (Fairbank, O'Meara et al, 2000). These initiatives were

launched to protect, promote and support breastfeeding by providing accurate information about adequate infant feeding practices and regulating the marketing of breast milk substitutes (UNICEF, 2013).

Kramer and Kakuma (2012) recommended exclusive breastfeeding for 6 months and the subsequent introduction of complementary foods, while continuing to breastfeed for 2 years altogether; evidence has shown that this practice is required for the optimal survival and development of infants.

1.2 Infant feeding in Nigeria

More than one third of children in Nigeria are malnourished and 29% are underweight (NPC, 2014). Infant feeding practices in Nigeria have continued to change over time (FMOH, 2011; NPC, 2014). The exclusive breastfeeding rate is low (17%)(NPC, 2014);it seems that exclusive breastfeeding is not yet accepted by all women in Nigeria because of various cultural and traditional orientations (Ajayi, Hellandendu et al, 2011; Oyibo, Okperi et al, 2011). Prelacteal introduction of herbs and subsequently mixed feeding with other traditional feeds is a norm in some cultures in Nigeria, and many women find it unreasonable not to practice what they believe has been a tradition for generations (Ajayi, Hellandendu et al, 2011).

The rate of exclusive breastfeeding for six months has consistently remained below 20% since 2003 (NPC, 2014). Suboptimal infant feeding might be one of the major causes of high infant mortality in Nigeria.

Plateau State is situated in the north-central geopolitical zone of Nigeria (see Figure 1.1), health indices in southern Nigeria are better than they are in the north (NPC, 2014).

Plateau State has an under five mortality rate of 165 per 1000 live births (Plateau State Government, 2009). This is higher than the national estimate of 128 per 1000 live births (NPC, 2014). Moreover, about 60% of children under the age of five years are stunted and there is a 5% prevalence rate of wasting in Plateau State (Plateau State Government, 2009).



Figure 1.1: Map of Nigeria showing the location of Plateau state. (Source- First Bank of Nigeria, 2009).

1.3 Statement of Research Problem and Study

Rationale

Nigeria's progress in reducing child mortality has been slow, and it is insufficient to achieve MDG 4 (UNICEF, 2008; Federal Ministry of Health [FMOH], 2011). Current estimates by the 2013 national demographic and health survey revealed that 12.5% (one in every eight) children) did not survive to their fifth birthday (National Population Commission (NPC), 2014). Most of the deaths of children are associated with diseases such as pneumonia, malaria, diarrhoea, ear and respiratory tract infection and meningitis (FMOH, 2011), which could be prevented or reduced by adequate breastfeeding practices (Black, Morris et al, 2008; Natural Resource Defence Council, 2005).

Infant feeding practices (rates) in Plateau State are not clear and the factors that determine or influence infant feeding in Plateau State are not known. The national estimate indicates a low exclusive breastfeeding rate and a decline in exclusive breastfeeding from 17% in 2003 to 13% in 2008 (FMOH, 2011; UNICEF, 2012). However, there appears to have been a slight increase in the exclusive breastfeeding rate from 13% in 2008 to 17% in 2013 (NPC, 2009; NPC, 2014).

It is believed that knowledge about factors that influence infant feeding will be helpful in implementing better and effective promotion programs.

1.4 Aim of the Study

The aim of this study was to determine the breastfeeding practices of women in Plateau State with a view to establishing a baseline that could be useful for planning breastfeeding promotion programmes in the future.

1.5 Research Question

What are the determinants of breastfeeding intention and practices of women in Plateau State?

1.6 Specific Objectives

The specific objectives of this study were:

1. To describe the socio-demographic profile of the participants.
2. To determine the infant feeding practices of the study sample.
3. To determine the exclusive breastfeeding rate of the study sample.
4. To determine the mothers' intentions to breastfeed the baby/infant following delivery of the current pregnancy.
5. To identify the factors that influence breastfeeding practices in the study sample.

1.7 Scope of the Study

This study examined infant feeding choices and breastfeeding practices among women in Plateau State, Nigeria. Women who had given birth to at least one previous live baby, who were pregnant with a subsequent baby, and who were attending antenatal care facilities in selected hospitals across the three senatorial zones of the state, were recruited for the study.

1.8 Significance of the Study

A study of breastfeeding patterns among women in Plateau State will bring to light the current status of breastfeeding, breastfeeding practices, and factors that influence women's choices in respect of infant feeding. This information is useful to the Plateau State Government in

planning and implementing breastfeeding promotion interventions in the future. Furthermore, this research will serve as a baseline for future studies and interventions.

1.9 Hypotheses

Primary hypothesis:

Social, demographic and economic factors influence infant feeding in Plateau State, Nigeria.

Secondary hypotheses:

- Ho1 There is no relationship between maternal age and infant feeding practices.
- Ho2 There is no relationship between parity and infant feeding practices.
- Ho3 There is no difference in infant feeding practices by women of different educational backgrounds.
- Ho4 There is no association between marital status and infant feeding practices.
- Ho5 There is no relationship between maternal employment and infant feeding practices.
- Ho6 Economic status does not affect the infant feeding practices of women in Plateau State.

Chapter two: Literature review

2.0 Introduction

This chapter presents a review of literature related to this study. The benefits of breastfeeding for mother and child, infant feeding practices, infant feeding in the context of HIV, factors that influence breastfeeding, the baby friendly hospital initiative and the health belief model are presented in this chapter.

2.1 Literature Search

CINAHL, GOOGLE SCHOLAR, MEDLINE through PUBMED and EBSCO were searched using the following key words; breastfeeding and Nigeria, exclusive breastfeeding or formula feeding or mixed feeding and Nigeria, Health Belief Model and breastfeeding and infant feeding practices and Africa. Additional search was performed using breastfeeding or infant feeding or mixed feeding and questionnaire or instrument for data collection as key words. Articles published from 2005 to date were included. Articles in other languages with English abstracts, articles with breastfeeding information about Nigeria, articles with information about infant feeding with regards to initiation, mixed feeding, formula feeding, exclusive breastfeeding and duration of feeding were also included.

Articles without key words related to the search terms and qualitative research articles were excluded. A total of 93 articles were drawn at this point.

Additional literature was sourced from WHO and UNICEF websites, Plateau State website, reference checking, and text books.

2.2 Benefits of breastfeeding

The benefits of breastfeeding for mother and child are presented here.

2.2.1 Benefits for mother

Exclusive Breastfeeding for six months is beneficial for women because it ensures better reproductive and postmenopausal health (NRDC, 2005; Murimi, Dodge et al, 2012).

2.2.1.1 Health benefits

Studies have shown that breastfeeding helps in losing pregnancy weight faster (Kramer and Kakuma 2012; Baker Gamborg et al, 2008; Sanusi and Falana, 2013). A study revealed that women who breastfed lost 4.4kg within a year, while those who did not breastfeed only lost 2.4 kg ($P<0.05$) (Dewey, Heinig and Nommsen, 1993). Breastfeeding promotes uterine involution, reduces blood loss after delivery by promoting uterine contraction and facilitating uterine involution (NRDC, 2005). Breastfeeding also reduces the risk of type 2 diabetes and cardiovascular diseases (Davis, Stichler et al, 2012). It also lowers the risk of breast, endometrial and ovarian cancers (Labbok, 2001; NRDC, 2005; Centre for Community Child Health, 2006; Huo, Adebamowo et al, 2008; Sule, 2011; Davis, Stichler et al, 2012). Absence of menstruation due to breastfeeding serves as temporary contraception for some women (Kuti, Adeyemi et al, 2007).

2.2.1.2 Economic benefits

Breastfeeding is cost effective as finances do not have to be set aside for infant formula (NRDC, 2005 Centre for Community Child Health, 2006).

2.2.1.3 Psychological benefits

Breastfeeding gives women a sense of bonding with their babies (NRDC, 2005 Centre for Community Child Health, 2006) and promotes mental health of women (Davis, Stichler et al, 2012).

2.2.2 Benefits for child

Adequately breastfed infants grow more rapidly and are healthier than those who were not (Ukegbu, Ebenebe and Ukegbu, 2010, Gale, Logan et al, 2012). Breast milk confers a child with significant protection against many infectious diseases because it contains antibodies (immunoglobulins) that strengthens the child's immunity (Ukegbu, 2010; Murimi, Dodge et al, 2012; Lamberti, Zakarija-Grković et al, 2013). Breastfeeding reduces the incidence of meningitis, malaria, asthma, respiratory diseases (such as pneumonia), ear infection, diarrhea, and urinary tract infection (Ukegbu, 2010; Murimi, Dodge et al, 2012; Ibadin, Ofili et al, 2012); Lamberti, Zakarija-Grković et al 2013). Kramer and Kakuma (2012) posited that in the first six months of life, exclusive breastfed infants are six times less likely to die from diarrhea and 2.5 times less likely to die from acute respiratory infection. Breastfeeding lowers the risk of allergy and food intolerance and improves brain development (Centre for Community Child

Health, 2006). Infants exclusively breastfed for six months have higher IQ, lower risk of childhood obesity, diabetes and lower risk of mental health problems, as they enter their teenage (UNICEF, 2010, Davis, Stichler et al, 2012).

Breastfed children have at least six times greater chance of survival in the early months than non-breastfed children (UNICEF, 2013). Early breastfeeding reduce infant morbidity and mortality as a result of the preventive benefits of breastfeeding in reducing long term diseases (WHO, 2007).

2.3 Infant feeding practices

Infant feeding practices vary from place to place and are influence by several factors. This section presents the picture of infant feeding in developed societies, Africa, some developing countries and Nigeria.

2.3.1 Infant feeding practices in developed countries

Exclusive breastfeeding for four months has increased globally from 48% to 52% during the 1990s, in 2005 (Hoddinott, David et al, 2008). Exclusive breastfeeding for four months in the UK was 7% (Hoddinott, David et al, 2008) while exclusive breastfeeding for four months in Norway (a comparable developed country) was 64% in 2005 (Hoddinott, David et al, 2008). An estimated 12% of women in the UK stop breastfeeding within the first four days after birth. (Hoddinott, David et al, 2008)

In the United States of America, the Center for Disease Control (CDC)(2013) reported a reasonable improvement in breastfeeding in America between 2000 and 2010 and also expressed concern that most infants were not fed as recommended. Prevalence of breastfeeding in United States of America was estimated at 77% while exclusive breastfeeding rate for 3 months and 6 months was 37.7% and 16.4% respectively (CDC, 2013). This demonstrates the fact that infant feeding varies within developed nations.

2.3.2 Infant feeding practices in developing countries

Exclusive breastfeeding for at least six months has been recommended for optimal growth and development of infants (Kramer and Kakuma, 2012). Children who are exclusively breastfed for 6 months have a better survival rate than children who were not breastfed (UNICEF, 2013).It has been found that suboptimal breastfeeding claims the lives of 1.4 million children under the age of five every year, and that it leads to 44 million disabilities every year (Black et

al, 2008). It is thus alarming that, in developing countries, only 39% of children below six months are breastfed exclusively (UNICEF, 2013).

Low rates of exclusive breastfeeding for the first six months of life is reported in Egypt (9.7%) and Kenya (2%) (Ghwass and Ahmed, 2011; Kimani-murage, Madise et al, 2011). However, studies in India and Uganda in the late 2000s reported an increase in exclusive breastfeeding rates (Sapna, Ameya et al, 2009; Mutekanga and Ateyeoaza, 2007).

A study in Peru reported that exclusive breastfeeding rates at one, three, and six months were 74, 72 and 35 percent indicating a decrease in exclusive breastfeeding rate with increasing infant age (Matias, Nommsen-Rivers et al, 2012). The overall estimate of infants less than six months exclusively breastfed in developing countries was 39% (UNICEF, 2013).

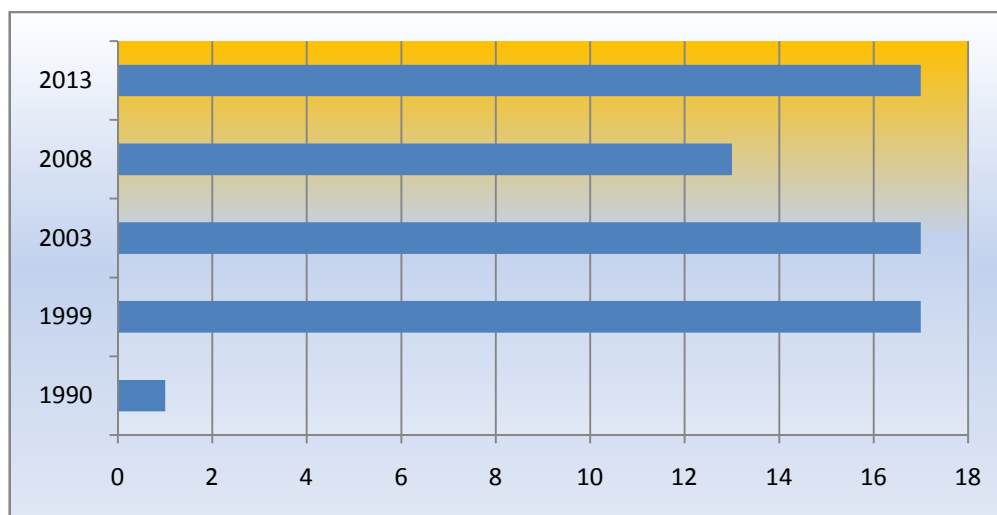
An examination of 440 household surveys in 140 countries, reported an increase in the prevalence of exclusive breastfeeding in almost all regions in the developing world between 1995 to 2010, with the biggest improvement seen in west and central Africa (Cai, Wardlaw et al, 2012). Despite significant improvement in infant feeding practices in developing countries, low breastfeeding rates are still reported in some countries (UNICEF 2013, Cai, Wardlaw et al, 2012).

2.3.3 Infant feeding Practices in Nigeria

In Nigeria, breastfeeding is almost universal at birth (Lawoyin, Olawuyi et al, 2001; NPC, 2014). Nigeria has one of the lowest exclusive breastfeeding rates in Africa (FMOH, 2011). The graphical presentation of trends in exclusive breastfeeding rates from 1990 to 2013 is illustrated in figure 2.1 below.

Reports indicated that exclusive breastfeeding has increased from one percent to 17% between 1990 and 1999, remained steady to 2003 and dropped to 13% in 2008. (NPC, 2009; FMOH, 2011; UNICEF, 2012). However, the report of the current demographic and health survey reveals an increase from 13% in 2008 to 17% in 2013 (NPC, 2014).

Figure 2.1: Percentage distribution of exclusive breastfeeding from 1990 to 2013.



Understanding the factors responsible for the drop in exclusive breastfeeding is important in checking the decline. The exclusive breastfeeding rate in Nigeria is low and falls short of the WHO recommendation of 90% coverage (Agho, Dibley et al, 2009). Nigeria adopted the Baby Friendly Hospital Initiative (BFHI) in 1992 and has since expanded to cover more facilities (Ukegbu, Ebenebe and Ukegbu, 2010; Worugji and Etuk, 2005). It was expected that the launching of the BFHI could improve and sustain recommended infant feeding practices, but the impact of the initiative was only significant initially on breastfeeding rate in Nigeria.

2.3.4 Regional variations of breastfeeding in Nigeria

There is a regional variation in breastfeeding rates in Nigeria, for example, in Calabar, Delta and Benin, located in the Niger Delta region of Nigeria, (see figure 1.1) exclusive breastfeeding rates of 60%, 18.6% and 27% respectively was reported (Essien, Samson-Akpan, et al 2009; Eregie 1998; Oyibo, Okperi et al, 2011). Another study by Ibadin, Ofili et al (2012) reported 60.9% exclusive breastfeeding in Benin suggesting a significant increase from 27% in 1998 to 60.9% in 2012. Mixed feeding was practiced by a significant proportion of women in Benin (Eregie, 1998).

In the eastern region (Abia, Anambra, Enugu, Ebonyi, and Imo states), optimal breastfeeding practice was poor and low initiation and practice of exclusive breastfeeding (22%) was reported, (Ukegbu, Ukegbu et al, 2010). In south western Nigeria, exclusive breastfeeding rates

ranges from 10 to 48 percent (Ajibade, Okunlade et al, 2013; Lawoyin, Olawuyi et al, 2001), and proportion of women that exclusively breastfed dropped with increase age of infants (57.4% at one month to 23.4% at 6 months)(Lawoyin, Olawuyi et al, 2001).

A study in north western Nigeria reported a 32.2% prevalence of exclusive breastfeeding (Umar and Uche, 2013).

2.3.5 Timely initiation of breastfeeding (within the first hour after birth)

About 36% of under five deaths occur in the first 28 days of live (Black, Morris and Bryce, 2003). It has been established that early initiation of breastfeeding (within the first hour of birth preferably 30 minutes) could significantly reduce neonatal mortality (Edmond, Zadoh et al, 2006, Debes, Kohli et al, 2013). Barros, Ronsmans et al (2012) in a survey of 54 countries to assess equity in maternal, newborn and child health intervention (birth assistance, antenatal care visits, breastfeeding, use of insecticide treated nets, immunization and care seeking for pneumonia) reported that 46.4% women initiated breastfeeding within the first hour after birth timely initiation of breastfeeding by women (46.4%). Higher rates (52 to 62%) of early initiation of breastfeeding were reported in some regions of Africa and Asia (Setegn, Gerbaba and Belachew, 2011; Sapna, Amaye et al, 2009). However, studies in Kenya and Uganda reported delay in breastfeeding initiation by women (37%) (Kimani-murage, Madise et al, 2011; Mutekanga and Ateyoaza, 2007). Delay in initiation of breastfeeding is reported in Nigeria (Okolo, Adewunmi et al, 1999; Oregie 1998). Okolo, Adewunmi et al (1999) reported in a study, that no woman initiated breastfeeding within the first 30 minutes after birth.

2.3.6 Prelacteal feeding

Prelacteal feeding refers to giving a newborn other feeds like herbs, water or glucose before breastfeeding. Prelacteal feeding is reported globally and is influenced by several factors. Reports have revealed that many women give feeds other than breast milk in the early days after birth in developing countries (Aborigo, Moyer et al, 2012; Kimani-murage, Madise et al 2011; Sapna et al, 2009). This practice has been associated with increased risk of infection and diarrhoea (UNICEF, 2013).

In Nigeria, introduction of supplements like glucose, water, beverages and herbal drinks was reported in south eastern Nigeria (Okolo, Adewunmi et al 1999; Adelekan, 2003).

2.4 Infant feeding in the context of Human Immunodeficiency syndrome (HIV)

There are particular implications for infant feeding where the mother is HIV positive. The prevalence of HIV among young women between 15 and 24 years is high globally (UNICEF, 2012), leaving a lot of concerns to reproductive health and infant feeding. About 33% of infants born to HIV positive mothers contract HIV through mother-to-child transmission in the absence of preventive intervention (UNICEF, 2014).

UNICEF (2013) reported that 3.1% of Nigerians are living with HIV of which 1700 000 are women. Nigeria has a high rate (30-45 percent) of mother-to-child HIV transmission (Shah, Johns et al, 2011).

2.4.1 Breastfeeding and HIV

Breastfeeding exclusively by HIV positive mothers is safe for the child when done as recommended (For the first six months) (Coutsoudis, Pillay et al, 2001; Desmond, Bland et al, 2008). WHO (2010) and Desmond, Bland et al (2008) asserted that exclusive breastfeeding for 6 months could significantly reduce HIV transmission when compared with non exclusive breastfeeding. Strict exclusive breastfeeding reduces the risk of HIV transmission from mother to child and death (Ilf, Piwoz et al, 2005; UNICEF, 2013). The risk of HIV transmission is three to four times higher among infant who are mixed fed compared with those who are fed breastmilk or formula exclusively (Charurat, Datong et al, 2009; USAID, 2011).

Exclusive breastfeeding is recommended for HIV positive mothers where replacement (exclusive formula or donor breast milk) feeding is not acceptable, feasible, affordable, sustainable and safe (Piwoz, Ferguson et al, 2006). Replacement feeding is very difficult to practice safely in sub-Saharan Africa due to high cost of replacement foods, inadequate power supply, and poor access to safe water and storage facilities (Abiona, Onayade et al, 2006).

2.4.2 Factors that influence infant feeding choice among HIV positive mothers

Stigmatisation has a strong influence in infant feeding choice of HIV positive mothers (Doherty, Chopra et al, 2006; Oladokun, Brown, Raynor et al 2010). Family pressure to breastfeed, lack of partner support, stigma; non-disclosure to partners and other family members and availability of formula are associated with mixed feeding among HIV positive

mothers (Adejuyigbe, Orji et al, 2008; Maru, Datong et al, 2009). Mixed feeding is commonly seen among young women without education and single mothers (Bula, 2009). Other common barriers to exclusive breastfeeding among HIV women are financial constraints, health problems, and misinformation about HIV transmission, local norms and prior feeding experience (Maman, Cathcart et al, 2012).

It is necessary to identify HIV positive mothers and provide adequate information about the risk of infecting their baby if they mixed feed. Since formula feeding may not be acceptable, feasible, affordable, sustainable and safe, exclusive breastfeeding for the first six months is strongly recommended for all HIV positive women in sub-Saharan Africa (Piwoz, Ferguson et al, 2006).

2.5 Factors that influence breastfeeding

Understanding the factors that influence breastfeeding and how they influence various infant feeding practices is important in improving breastfeeding practice through appropriately targeted and designed promotion programs.

2.5.1 Maternal Age

Maternal age at the time of birth influenced breastfeeding initiation and duration among Chinese women (Li, Zhang et al, 2004; Centre for Community Child Health 2006). The relationship between maternal age and infant feeding practices differs from place to place. Ogunlesi (2010) posited that maternal age is not a significant determinant of breastfeeding. However, some studies have demonstrated that older maternal age is associated with exclusive breastfeeding and longer duration of breastfeeding (Bolton, Chow et al, 2009; Ukegbu, Ukegbu et al, 2010), while others, associated low rates of exclusive breastfeeding with younger maternal age (Qureshi, Oche et al, 2011; Lawoyin, Olawuyi et al, 2001). Use of artificial milk has been associated with younger mothers (Brown, Raynor et al, 2011).

2.5.2 Education

The influences of education on infant feeding practices vary from one setting to another (Centre for Community Child Health, 2006; Ahmed, 2008; Sapna, Ameya et al, 2009; Okeh, 2010; Ajibade, Okunlade et al, 2013). Maternal education below secondary level contributed to prelacteal feeding and failure to practice exclusive breastfeeding in western Nigeria (Ogunlesi, 2010). Women with low level of education are less likely to practice exclusive

breastfeeding (Li,Zhang et al, 2004; Uchendu, Ikefuna, and Imodi, 2009; Qureshi,Oche et al, 2011). On the other hand, another study in Nigeria reported that lower maternal education attainment is related to increases in breastfeeding practices (Lawoyin, Olawuyi et al, 2001), while a study in southern Nigeria suggested that maternal education was not a significant determinant of breastfeeding (Oreigie, 1998).

It is concluded that, infant feeding is influence by education in different ways, hence the need for investigation in this population.

2.5.3 Occupation/employment

Employment of women and occupational status influences breastfeeding (Okeh, 2010; Raffle, Ware et al, 2011;Muluye, Woldeyohannes et al, 2012) and may even be a barrier to breastfeeding (Velpuri, 2004; Ajibade, Okunlade et al, 2013) especially if there is no adequate planning for breastfeeding mothers in the workplace. Women's work may have a negative impact on breastfeeding because of inadequate time to breastfeed (Ukwuani and Suchindran, 2003). Working outside the home after birth was reported to have significantly reduce the likelihood of exclusive breastfeeding at six months (Xu, Binns, et al, 2007; Qureshi, Oche et al, 2011; Chuang, Chang et al, 2010;Matias, Nommsen-Rivers et al, 2013). Jager, Hartley et al (2012) identified return to work as an important factor that influence breastfeeding because of the challenges women face in trying to sustain adequate infant feeding practices while working. Women who are unemployed are less likely to quit breastfeeding early when compared with women working as administrators and in manual jobs (Kimbrow, 2006) and are more likely to exclusively breastfeed (Tan, 2011). This implies that women who work many hours are likely to mix feeding.

Occupation of both parents affects breastfeeding (Lawoyin, Olawuyi et al, 2001).

A study by Scott, Landers et al (2001) reported that mothers who intended to return to full or part time work or study within 6 months of the birth were less likely to be breastfeeding at discharge (from hospital) than mothers who intended to remain at home. Because of the challenges associated with breastfeeding by working mothers (poor support for breastfeeding in the work place), WHO (2013) recommended that all women working should be supported to sustain breastfeeding when they return to work by giving them a minimum of one break per day to breastfeed or express breast milk.

2.5.4 Economic status

Studies have shown that high socio-economic status was significantly related to low exclusive breastfeeding rate, and overall duration of breastfeeding (Lawoyin, Olawuyi et al, 2001; Okeh, 2010; Ekanem, Ekanem et al, 2012; Ajibade, Okunlade et al, 2013). A contrary opinion was reported by Velpuri, (2004) in which women with high income status were associated with a high breastfeeding rate. A study in Nigeria identified low economic status as one of the most important determinants of suboptimal breastfeeding (non-exclusive and short duration) and concluded that significant improvement in the socio-economic status of Nigerian women could help reduce childhood malnutrition (Adelekan, 2003).

2.5.5 Marital status

Marital status of a woman is an important determinant of infant feeding practices in some settings in Nigeria and Ghana (Sika-Bright, 2010; Ajibade, Okunlade et al, 2013). Suboptimal infant feeding is common with single mothers (Kimani-murage, Madise, et al, 2011; Tampah-Naah and Kumi-Kyereme, 2013). Studies concluded that single mothers are less likely to breastfeed adequately and longer due to absence of partners' support and confidence compared with married mothers (Lamontagne, Hamelin et al, 2008; Ajibade, Okunlade et al, 2013). This conclusion was reached following a chi-squared analysis that indicated a significant relationship ($P=0.01$) between marital status and exclusive breastfeeding and duration of breastfeeding.

2.5.6 Parity

The effect of parity on infant feeding and breastfeeding in particular is inconclusive because in some settings multiparity has a positive impact on breastfeeding (Ukegbu, Ukegbu et al, 2010; Qureshi, Oche et al, 2011) while in other settings, the impact is negative (Uchendu, Ikefuna et al, 2009). Studies have shown that parity did not confer any advantage to breastfeeding practice (Ogunlesi, 2010; Sapna, Ameya et al, 2009) meaning that breastfeeding behaviour of primiparous and multiparous women is the same (Amatayakul, Wongsawasdi et al, 1999).

2.5.6.1 Primiparity/low parity

Primiparous women are more likely to desire or plan to breastfeed than multiparous women (Lee, Rubio et al, 2005; Leung, Hung et al, 2003). In some settings longer duration of breastfeeding has been associated with low parity suggesting that fewer children in the home

incur less cost to women's time (Uchendu, Ikefuna et al, 2009). It has been demonstrated that primiparous women were twice as likely to be breastfeeding at discharge when compared with multiparous women; however, there was no association between parity and overall duration of breastfeeding (Scott, Landers et al, 2001).

2,5.6.2 Multiparity/ high parity

Studies have shown that high breastfeeding rate is associated with multiparity (Ukegbu, Ukegbu et al, 2010; Qureshi, Oche et al, 2011). A study revealed that women with fewer than five children are likely to record low exclusive breastfeeding duration. (Qureshi, Oche et al, 2011). Tan, (2011) opined that multiparity is associated with the practice of exclusive breastfeeding. This means that, primiparous mothers are less likely to breastfeed exclusively (Lawoyin, Olawuyi et al, 2001).

2.5.7 Antenatal care

Sixty percent of women in Nigeria have access to antenatal care (NPC, 2014) and it may influence infant feeding practices because antenatal attendance is a potential determinant of infant feeding practice (Agho, et al 2009; Ghwass and Ahmed, 2011). Antenatal care increases the likelihood of early breastfeeding initiation (Ogunlesi, 2010). Mothers who did not attend antenatal clinic during pregnancy may have a poor initiation and exclusivity of breastfeeding (Ogunlesi, 2010).

2.5.8 Multiple births

Mothers of twins face more challenges than mothers of singletons when it come exclusive breastfeeding. A study revealed that insufficient milk for the twins, and time for breastfeeding are common causes of early cessation of breastfeeding among mothers of twins (Damato, Dowling, et al, 2005). A study revealed that 89.4% of women with twins initiated breastfeeding and that support for mothers of twins to overcome breastfeeding problem over the first 6 weeks may result in a longer duration of breastfeeding (Damato, Dowling, et al, 2005). Mothers of twins are can breastfeed for the recommended duration if supported (Damato, Dowling et al, 2005).

2.5.9 Type of delivery

Mothers who had a normal delivery tend to have a positive attitude towards breastfeeding and had less stressful experiences with breastfeeding than mothers who gave birth through

caesarean section (Imhonde, Shaibu, et al, 2012; Carlander, Edman et al, 2009). Caesarean delivery is associated with formula feeding and low milk production (Li, Laung et al, 2004). In a study of the effects of maternal care practices on breastfeeding, DiGirolamo, Grummer-Strawn et al, (2008) concluded that type of delivery (vaginal versus caesarean) had no influence on breastfeeding practices. Patel, Liebling et al (2003) also reported that type of delivery had no impact on breastfeeding.

2.5.10 Birth weight/infant size

Low birth weight infants are less likely to exclusively breastfeed (Matias, Nommsen-Rivers et al 2012; Butte, Lopez-alatcon et al, 2002) and may be associated with the belief that breast milk substitute is required to make up the low weight (Matias, Nommsen-Rivers et al, 2012).

2.5.11 Breastfeeding experience/confidence

Breastfeeding experience helps in building confidence and confidence is a potential determinant of breastfeeding (Brodribb, Fallon, et al 2008; Meedya, Fahy et al, 2010). Women with little or no previous breastfeeding experience require additional support to be able to breastfeed adequately (Kronborg, Væth, et al, 2007) women with breastfeeding experience are more likely to intend to breastfeed than those who never had any experience (McInnes, Love et al, 2001). Health beliefs, experience of friends and family could encourage or discourage breastfeeding (Raffle, Ware et al, 2011). A study reported that less confident women are four to five times more likely to experience breastfeeding failure (Dennis, 1999). Furthermore, a longitudinal study of pregnant women in Australia to determine the influence of antenatal services on breastfeeding revealed that mothers with high breastfeeding confidence were more likely to breastfeed compared with women with low breastfeeding confidence (79.3% versus 50.5%) (Blyth, Creedy et al, 2004).

2.5.12 Breastfeeding Support

Literature related to support from family, friends and health personnel are presented in this subsection.

2.5.12.1 Support from family and friends

Women who enjoyed support from family and friends are likely to breastfeed longer (Wambach and Cohen, 2009). Presence of mother-in-law in the home increased breastfeeding self efficacy and has implication for continuing breastfeeding (Ku and Show, 2010). Social support by women's partners (husbands encouraging wives to breastfeed) may promote, and

prolonged breastfeeding (Lamontagne, Hamelin et al, 2008; Meedya, Fahy et al, 2010; Scott, Landers et al, 2001; Tan, 2011; Brown, Raynor et al, 2011). Grandmothers are influential in infant feeding choices and can positively influence breastfeeding, especially if they are aware of recommended practices (Kerr, Dakishoni et al, 2008; Grassley and Eschit, 2008).

2.4.12.2 Support from health workers

Clinicians and health workers may have an influential role in breastfeeding initiation and continuation (Li, Laung et al, 2004). Professionals can sometimes have a negative influence when they provide women with breastfeeding information and recommendations that are confusing (Lamontagne, 2008). Post natal support from experts increase breastfeeding duration (Brown, Raynor et al, 2011).

Kronborg, Væth et al, (2007) reported that home visits in the first 5 weeks following birth may prolong the duration of exclusive breastfeeding. This assertion was made after observing a significant increase in the duration of breastfeeding of breastfeeding with an intervention which focused on assisting women to overcome obstacle to breastfeeding. Ahmed (2008) identified support for mothers immediately after delivery as a way of overcoming breastfeeding problems and enhancing confidence.

2.5.13 Breastfeeding problems

Women have various experiences with breastfeeding (Schmied and Barlay, 1999). Mothers commonly complain of painful / sore nipple or breast (Lamontagne, Hamelin et al, 2008; Raffle, Ware et al, 2011; Jager (2012), low milk production (Lamontagne, Hamelin et al, 2008; Raffle, Ware et al, 2011; Jager, 2012; Mutekanga and Atekyereza, 2007; Muluye, 2012), Infants refusal to suck (Lamontagne, Hamelin et al, 2008; Jager (2012), breast infection, maternal illness (Doherty, Sanders et al, 2012), and Stress (Ugbaoja, Berthrand, et al, 2013). Others include exclusive breastfeeding not culturally acceptable (Ugbaoja, Berthrand, et al 2013; Ajibade, Okunlade et al, 2013), husband refusal (Ugbaoja, Berthrand et al, 2013) and delayed milk production after delivery (Mutekanga and Atekyereza, 2007).

2.5.14 Other factors that influence breastfeeding

Inadequate knowledge regarding breastfeeding influence infant feeding (Frose, Banu et al et al, 2012). Adequate counselling about breastfeeding could significantly improve breastfeeding because women who enjoyed support through counselling, (Sapna, Ameya et al, 2009). Women who knew how long they were breastfed as a child showed a longer duration of

exclusive breastfeeding and total breastfeeding than those who did not (Ekstrom, Widström, et al 2003; Forster, McLachlan et al, 2006).

Friends' ways of feeding their babies may also be influential in infant feeding practices of women (Sika-Bright, 2010). Availability of breastfeeding facilities (Bono and Pronzato, 2012), early breastfeeding initiation (Ghwass and Ahmed, 2011), and rural residence, (Tan, 2011), were positively associated with breastfeeding.

Maternal prenatal intention to breastfeed has an impact on infant feeding practices (Donath, Amir and ALSPAC study Team, 2003) and high intention and self efficacy increase the likelihood to breastfeed for 6 months (Wilhelm, Rodeherst et al, 2008).

2.6 The Baby Friendly Hospital Initiative

The baby friendly hospital initiative (BFHI) was introduced to promote, protect and support breastfeeding following the Innocenti Declaration (UNICEF, 2005). The BFHI introduced by WHO/ UNICEF in 1991 comprising of ten steps to successful breastfeeding, encourage every health facility providing maternal services and care for new born/infants to:

1. “Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within half an hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drinks other than breast milk, unless medically indicated.
7. Practice rooming-in- that is allows mother and infant to remain together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic” (UNICEF, 2005).

WHO (2014) reported that over 152 countries in the world had implemented the BFHI. Nigeria is one of these countries. By 2002, Nigeria had 1147 BHFI facilities (UNICEF,

2005). It is expected that the number of hospitals with BFHI status has increased with time. The impact of the increase in BFHI facilities and other breastfeeding promotion programs on breastfeeding was obvious from the national demographic and health survey reports of 2008 and 2013 (NPC, 2009; NPC, 2014). Monitoring infant feeding behaviour is an important aspect of evaluating the impact of programs focused on improving breastfeeding.

2.7 Theoretical framework

This study was theoretically underpinned by the Health Belief Model (Hayden, 2009). The Health Belief Model is useful in predicting health related outcome (Sweeney and Gulino, 1987; Brieger, 2006). Lizewski (2010:3) concluded that “people will take action to undergo health prevention behaviour when they are ready, they see it as beneficial and the difficulty is not greater than what is to be gain” According to the model, “personal belief influences behaviour”(Janz and Becker, 1984: 1).

2.7.1 Constructs of the health belief model

The Health Belief Model was developed in the 1950s to explain why medical screening programs in the US were not successful (Hayden, 2009). He concluded that “The underlying concept of the original Health Belief Model is that, health behaviour is determined by personal beliefs or perceptions about a disease and the strategies available to decrease its occurrence” (Hayden, 2009: 1). The main constructs of the model are: perceived susceptibility (individual’s perception of exposure to danger and likelihood to contract a disease), perceived severity or seriousness (individual’s perception of the gravity of disease), perceived barriers and perceived benefits (Janz and Becker, 1984; Hayden, 2009). Three more constructs were added later resulting in the expansion of the Health Belief Model to include modifying variables, cues to action and self-efficacy (Hayden, 2009). According to Hayden (2009), the first four constructs are modified by variables such as culture, past experience, educational level, skill and motivation to produce the individual perception. The individual perception together with cues to action and self-efficacy determine the health behaviour or action (see Figure 2.2).

Figure 2.2: The Health Belief Model.

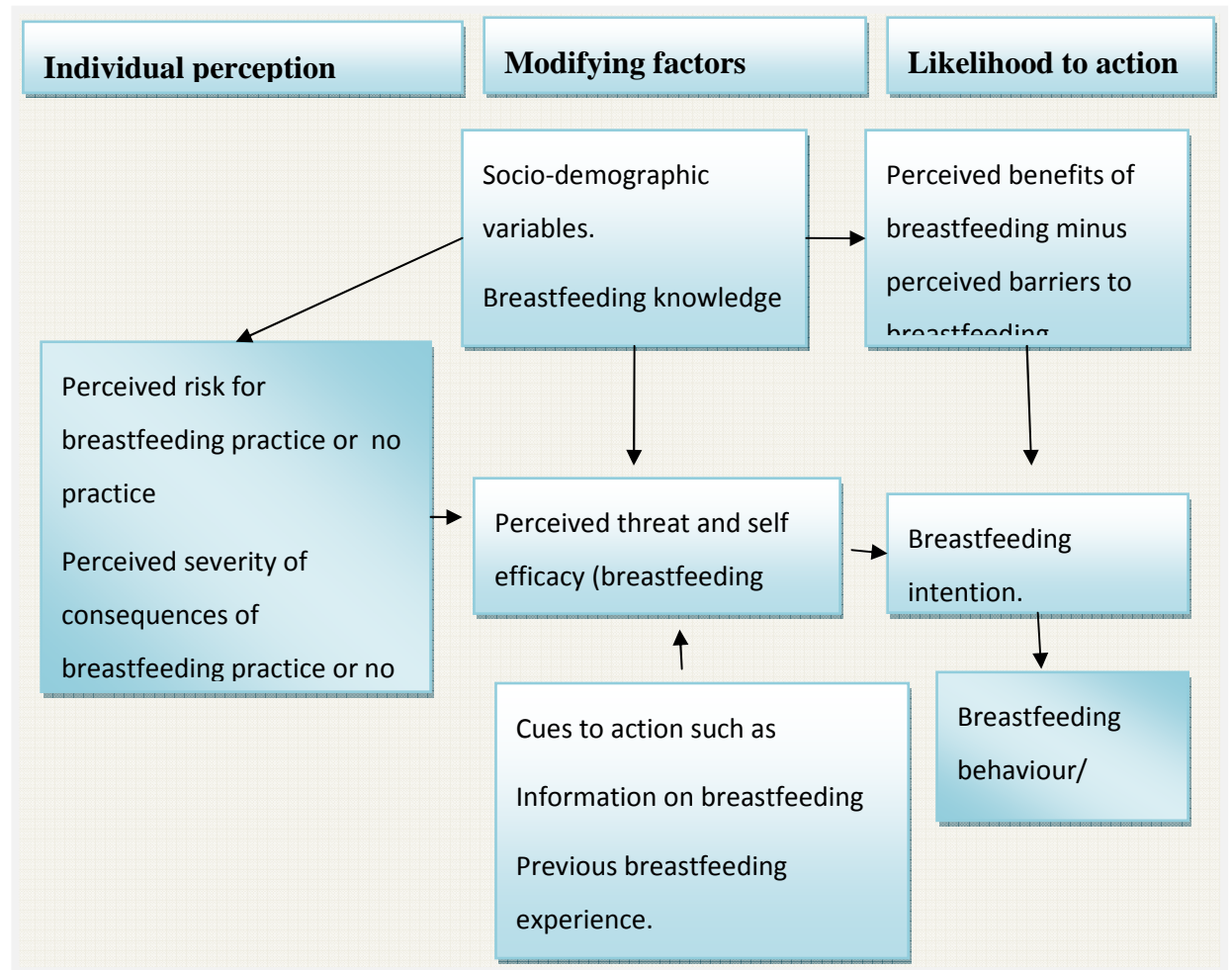


Figure 2.2: The Health Belief Model (Adapted from Kabiru, Beguy, Crichton, and Zulu, 2011)¹

- Perceived seriousness- This speaks to an individual's belief about the seriousness or severity of a disease. The perception of seriousness is a function of medical information or knowledge an individual has about a disease. It may also come from beliefs a person has about the difficulties a disease would create or the effect it would have on his or her life in general.

¹The Health Belief Model depicted in Figure 2.2 was originally used by Kabiru et al (2011) in a study of HIV/AIDS among youths in Kenya. For this study the topic has been changed from HIV/AIDS to breastfeeding.

- Perceived susceptibility- This is one of the influential perceptions in determining health behaviour. The tendency of engaging in behaviour to reduce risk of a disease increases with increased perceived risk of the diseases.
- Perceived benefits- This is a person's view of usefulness of new behaviour in reducing the risk of developing a disease, people tend to adopt healthier behaviour when they believe a new behaviour will decrease their chances of developing a disease.
- Perceived barriers /cost of action. This is an individual's own evaluation of the obstacles in the way of him or her adopting a new behaviour.
- Modifying variable- The four major constructs of perception are modified by other variables such as culture, educational level, past experiences, skill and motivation.
- Cues to action – These are events, people or things that move people or things that move people to change their behaviour e.g. illness of a family members, media report, mass media campaign.
- Self-efficacy- This is belief in one's ability to do something. Self-efficacy is influenced by personal accomplishment (personal experience), vicarious experience (individual performances whether live, recorded or printed), verbal persuasion from health care professionals, peer counsellors, family members or personal friends, physiological and affective state (excitement or satisfaction, enhances self-efficacy while pain, fatigue, anxiety or stress reduces one's sense of self efficacy) (Danis, 1999).

2.7.2 Application of the model to breastfeeding practice

In this study, the health behaviour or action is breastfeeding; the modifying variables (cues to action, socio-demographic variables and self-efficacy) are factors that influence breastfeeding, while the personal perception refers to knowledge and attitude that relates to breastfeeding. The researcher assumes that breastfeeding practices are determined by the interaction between personal perceptions of women and the modifying variables. Perceived susceptibility and perceived severity of the consequences of not breastfeeding exclusively for six months and subsequently for two years as recommended by WHO (WHO, 2003); perceived benefits of breastfeeding such as promotion of immunity, good growth and development; perceived "cost" of breastfeeding such as time, health status, convenience, attitudes and social norms, determines the practice of breastfeeding. The interaction between the benefits and barriers determine whether or not the health behaviour will be practiced.

If women have positive perception about breastfeeding and are well supported to overcome breastfeeding challenges and barriers, the tendency that these women will breastfeed as recommended is high. The theoretical frame work informed the study.

2.8 Conclusion

The reviewed literature shows that infant feeding practices vary between developed and developing countries and within countries. Breastfeeding is almost universal in most developing countries, but exclusive breastfeeding seems not to be widely accepted. The proportion of breastfeeding in developed countries tends to be lower than developing countries; however, exclusive breastfeeding tends to be more accepted in developed countries. Socio-demographic, pregnancy and birth related and environmental factors are important determinants of infant feeding. Several factors that affect infant feeding practices have been identified and this appeared to vary such that a significant determinant in one setting may not be important in another.

2.9 Knowledge gaps in literature

Breastfeeding intentions of women and current infant feeding practices have not been reported and the factors that influence infant feeding in plateau state are unclear. Therefore a study to assess these factors in Plateau State is warranted for planning and redesigning of breastfeeding promotion interventions.

Sociodemographic factors have been identified as important determinants of infant feeding in every setting. The manner in which these factors influence infant feeding varies. Therefore, this study intends to describe the profile of pregnant women in Plateau State and subsequently determine the relationship between maternal profile and infant feeding.

More women are engaged in employment than previously and this may have negative impact on child breastfeeding practices as seen earlier. It is necessary that government and employers provide adequate support for women in the work place. The impact of maternal employment on breastfeeding in the Plateau state is not known and this study will attempt to establish this.

Chapter three: Methods

3.0 Introduction

This chapter describes the setting in which the study was conducted, the study design, and the method of data analysis used, as well as raising the ethical issues that are specific to this study. As the instrument for data collection required modification and translation, this detail will be presented in Chapter Four.

3.1 Setting

This study was conducted in Plateau State, Nigeria. Plateau State is located in the north central geopolitical zone of Nigeria (see Figure 3.1). According to the most recent census, conducted in 2006, the state has a population of 3,206,531 people (City Population, 2013), and makes up about 2.3% of Nigeria's population. It is anticipated that the population will increase to 4,131,870 by 2015, based on an annual growth rate of 2.83 (Plateau State Government, 2009). Figure 3.1 Map of Nigeria showing the location of Plateau State.



Source: International technology entertainment (2013)

There are 3 senatorial zones and seventeen (17) local government areas in the state (Movement for the Creation of Lowland State (MCLS), 2011) (see Figure 3.2).

Figure 3.2: The map of Plateau State showing the three senatorial zones and their associated districts.



Source: Nigerian muse (nd) (www.nigerianmuse.com)

The northern senatorial zone comprises the following local government areas: Jos north, Jos south, Jos east, Bassa, Riyom and Barkin Ladi. The central senatorial zone comprises Bokkos, Kanke, Mangu, Pankshin and Kanam local government areas. Lastly, the southern zone comprises the areas of Lantang south, Langtang north, Mikang, Qua'an pan, Shendam and Wase (Community and Social Development Project, 2011).

Hospitals in Plateau State are owned and operated by the government, by individuals and by voluntary organizations. Plateau State Government administers fifteen hospitals, forty-eight maternity and child welfare clinics, fifty-nine general clinics and two hundred and eighty-five dispensaries. The MCLS further reported that private individuals own forty-seven hospitals, six maternity clinics, sixty-two child welfare clinics, three hundred and ten general clinics and one hundred and nineteen dispensaries. Voluntary organisations own and operate five

hospitals, three maternity clinics, sixty-two general clinics and forty-five dispensaries (see Table 3.1).

Facility	State government	Private	Voluntary agencies	Total	Level of services
Dispensaries	285	119	45	449	Primary
General clinics	59	310	62	431	Primary
Maternity clinics		6	3	9	Primary
Maternity and child welfare clinics	48	62		110	Primary
General hospitals	15	47	5	67	Secondary
Teaching hospital(owned by federal government)	One				Tertiary

Table 3.1: Distribution of health services according to scope and ownership

The state-owned health facilities can be classified based on the types of services rendered and their proximity to the people as primary and secondary health facilities. The primary health care facilities comprise dispensaries, maternity and child welfare clinics and health centres. They are the first point of contact with the health system and provide treatment for common diseases and routine immunizations (MCLS, 2011). The secondary facilities provide both routine and more complex health care services and comprise cottage and general hospitals (MCLS, 2011). At the tertiary level, there is a federal government-owned teaching hospital in Plateau State that serves as a referral centre which also renders complex health services.

In 2008, 54% of women were literate, 84% of pregnant women received ante-natal care from a health professional, while hospital delivery rate was 30.2% (Plateau State Government, 2009). This study involved women from two different types of settings. The women who attend the primary health care facilities are mostly from rural/semi-urban areas, mainly because these facilities are situated more in rural areas. Moreover, most of the people in the rural/semi-urban areas are farmers with a low level of literacy.

3.2 Study design

A descriptive cross-sectional study design was adopted for this study. Descriptive studies are designed with little or no control by the researcher (Burns & Grove, 2007). This study examined women in their natural setting, i.e. in an environment that has not been altered, controlled or manipulated. Furthermore, it was important to obtain information about breastfeeding practice at a single point in time, without subsequent involvement of subjects and with no manipulation of variables or establishment of causality required. Therefore a cross-sectional design was considered suitable for this study (Li et al, 2005).

3.3 Target population

The target population comprised women who were attending antenatal care in government-owned primary and secondary health care facilities in Plateau State. Tertiary health care institutions, private hospitals, facilities owned by voluntary organizations and dispensaries were all excluded from this study for the following reasons:

1. Antenatal care is not delivered at dispensaries.
2. Private hospitals charge fees for antenatal services, whereas these services are free in government hospitals. In addition, private hospitals are not uniformly distributed across the state, unlike the government hospitals.
3. Health facilities owned by voluntary organizations are clustered in the capital city, and thus may cause bias in terms of geographical representation if they were to be included.
4. There is only one tertiary hospital in the state, which is located in the northern senatorial district. Because it is a referral centre, women from the three senatorial districts whose conditions could not be managed at the primary and secondary health care facilities are referred for management of complex health conditions. As such, it is possible that a senatorial district may have more participants than another if this facility were to be included in the study. Therefore, in order to maintain equality / uniformity / equivalence in terms of geographical representation, the tertiary hospital was not included.

3.4 Sample size

The sample size for this study was determined by using the formula below, which was suggested by Suresh and Chandrashekara (2012):

$$N = \frac{Z_{\alpha/2}^2 * P * (1-p) * D}{E^2}$$

Where:

N is the sample size

$Z_{\alpha/2}$ is the normal deviate = 1.96

P is the prevalence of breastfeeding = 50% where the prevalence is not known (Suresh&Chandrashekara, 2012)

D is the design effect = 2

E is the margin of error defined as 10% of P, i.e. $10\% * 50\% = 0.1 * 0.5$

Therefore:

$$N = \frac{[(1.96)^2 * 0.5 * (1-0.5) * 2]}{(0.1 * 0.5)^2} = 768$$

A total number of 768 participants would thus be required for this study. To allow for the proportion of respondents who may not return the questionnaires, Suresh and Chandrashekara (2012) suggested the formula below to take care of such a situation

$$N^1 = N / 1 - q$$

Where q is the proportion of attrition and is usually 10%

Therefore, applying this to the sample size determined above

$$N^1 = 768 / 1 - 0.1 = 853.$$

The sample size required for this study is thus 853. An additional 11 people were added to make it divisible by three, in order to allow for equal number of respondents from the three zones.

Final sample size = 864.

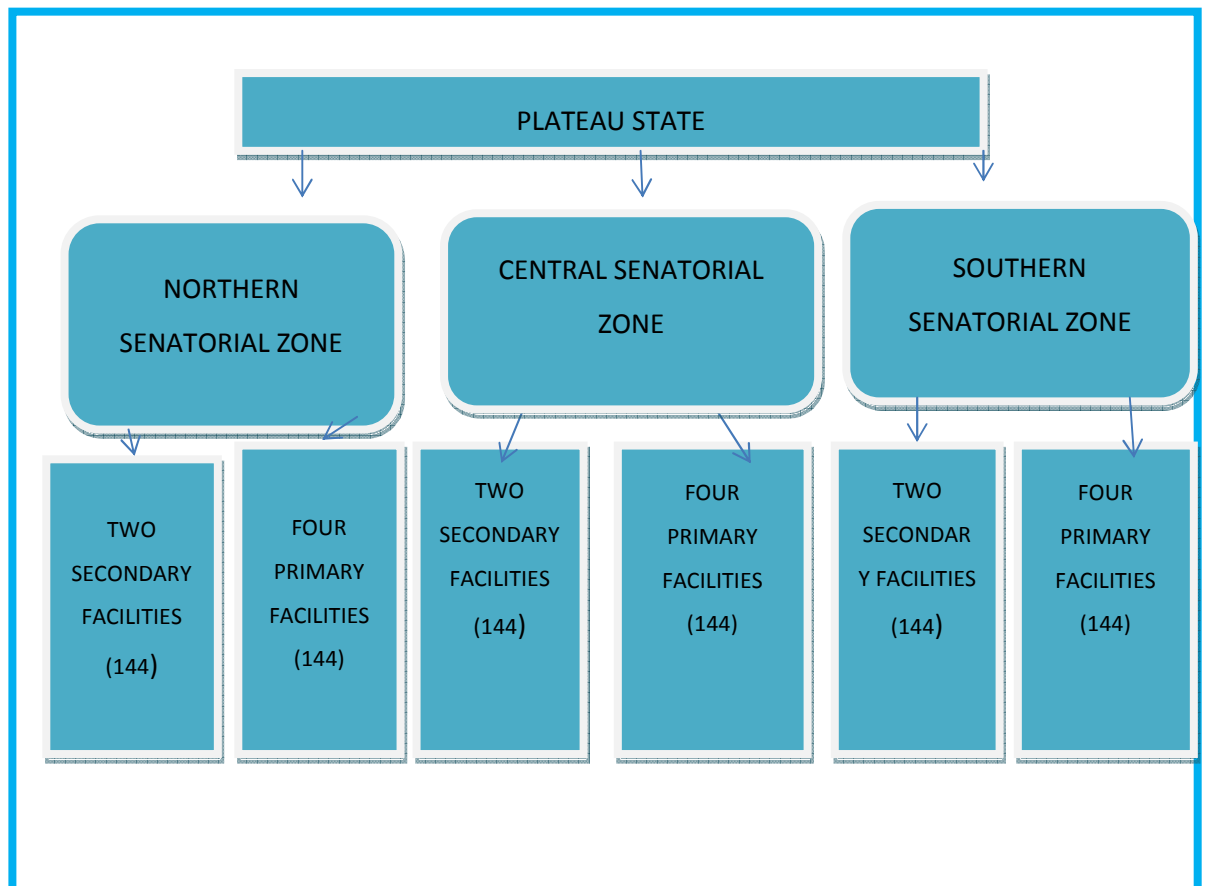
3.5 Sampling technique

A sample frame consisting of the total number of women who met the inclusion criteria and who attended antenatal care in the selected hospitals was developed. The names were listed according to their booking dates for receiving antenatal care for the current pregnancy.

Systematic sampling that was based on the date of commencement of current antenatal care was used to determine which women would participate in the study. If any woman did not wish to participate in the study for any reason, she was replaced by the next woman on the sample frame list.

A multi-stage sampling method was used to select the respondents from the three senatorial zones of the Plateau State, as indicated in Figure 3.3 below.

Figure 3.3 Sampling chart.



- In the first stage, the Plateau state was divided into the three senatorial districts/zones.
- In the second stage, two local government areas were randomly selected (or “picked out of a hat”) from each senatorial zone, thus giving a total of six local government areas.
- In the third stage, three facilities from each local government area were chosen by simple random sampling. As had been done in the previous stage, the names of all the secondary health care facilities in each local government area were written onto pieces of paper. These papers were folded and shuffled in a basket. The Director of Health from the local government areas or his/her representative was asked to pick one of these secondary health care facilities out of the basket; as there were two local government areas, there were thus two secondary health care facilities in each zone. The same was done for the primary health care facilities in the local government area, although in this case, two primary facilities were selected in each of the two areas, which meant that there were four primary health facilities in each zone. In all, a total number of eighteen health care facilities were selected across the state (six from each zone).
- In the fourth stage, an equal number of respondents were drawn from each senatorial zone (288). Half (144) of the respondents from each zone were drawn from two secondary facilities, while the remaining half (144) were drawn from the four primary facilities in order to ensure diversity in socioeconomic and educational backgrounds.
- Finally, in the fifth stage, the respondents from the primary facilities were determined on a proportional basis, i.e. the number of respondents that were drawn from each selected primary facility in a zone depended on the proportion of women attending antenatal care in that clinic who were eligible in relation to the other clinics selected from each zone. This information was provided by the Community Health Officer or the nurses in charge at each facility.

In summary:

- Two local government areas were selected from each of the three zones = $2 \times 3 = 6$ local government areas.
- One secondary facility was selected from each of the local government areas = $1 \times 6 = 6$ secondary facilities.
- Two primary facilities were selected from each of the six local government areas = $2 \times 6 = 12$ primary facilities.

- From each zone, 72 respondents were drawn with respect to each of the two secondary facilities = $72 \times 2 = 144$.
- From each zone, it was anticipated that there would be 36 respondents from each primary facility = $36 \times 2 \text{ facilities} \times \text{local governments} = 144$
- Total number of respondents per zone = $144 + 144 = 288$.
- The total number of respondents drawn from each secondary facility in the state = $144 \times 3 \text{ zones} = 432$
- The total number of respondents from recruited from primary facilities in the state for the survey was $144 \times 3 \text{ zones} = 432$.

3.6 Recruitment

Participants were recruited based on their willingness to participate in the study and their eligibility according to the relevant inclusion and exclusion criteria. See sampling.

3.7 Inclusion and exclusion criteria

3.7.1 Inclusion criteria

For a woman to participate in this survey, she must have given birth to a live baby within the past three years and currently pregnant. This study intended to obtain the best “snap shot” of infant feeding practices and to identify the determinants of these practices. According to the Health Belief Model, breastfeeding intention is a positive indicator of actual breastfeeding practice; therefore breastfeeding intention could be an estimation of breast feeding practice. Women who have had at least one child in the past should moreover be able to recall information about previous infant feeding practices, while currently pregnant women will provide more reliable information about feeding intention than would women who are not pregnant, because it is during the period of pregnancy that women usually take decisions about infant feeding (Chezem, Friesen et al 2001; Tutt, 2012). Li, Zhang et al (2005: 109) posited that “maternal recall will provide accurate estimates of initiation and duration of breastfeeding especially when the duration of recall is over relatively short period (≤ 3 years).” Therefore, potential participants should have had at least one child in the past three years and they should currently be pregnant.

3.7.2 Exclusion criteria

Women whose previous baby had not survived for at least 24 hours were excluded, as they were unlikely to be able to provide any useful infant feeding history.

3.8 Method of data collection

It was decided to use a self-administered questionnaire that was validated and pilot tested for data collection because questionnaires form an integral part of descriptive surveys (Eiselenet al, 2005). In the case of participants who could not read, the researcher administered the questionnaire to them, while those who did not understand English were given the Hausa questionnaire. (Details of this will be presented in Chapter 4).

3.9 Instrument for data collection

The questionnaire for data collection was adapted from Begley et al (2008). The original instrument was used by Begley et al (2008) to study infant feeding practices in Ireland. Changes were made to the tenses of the questions because the Irish survey had been prospective. Further, changes were also made to the wording of some of the options of questions asked, in order to suit the Nigerian setting. For example, “lactation consultant” is not a familiar term in this setting; some of these terms were thus replaced with more familiar terms. Where options like nurse and midwife were presented separately in the original questionnaire, they were merged because participants would not understand the difference between a midwife and a nurse. In Nigeria, nurses (who work in a maternity unit) are not distinguished from midwives because they carry out the same duties and wear the same uniform. Consequently, the target population regards them as the same. Some closed questions were changed to be open-ended to allow respondents to express themselves more fully. The details with regard to the development, validation and translation of the instrument are presented in Chapter Four.

3.10 Method of data analysis and presentation

Information retrieved was initially coded and entered into the Statistical Package for Social Sciences (SPSS version 20). Frequencies of variables were subsequently computed and presented in frequency tables. Numerical data, such as maternal age, gestational age, parity, average monthly earnings, duration of exclusive breastfeeding, duration of total breastfeeding,

duration of anticipated exclusive breastfeeding and duration of anticipated total breastfeeding were analysed using measures of central tendency, and the means were compared by ANOVA. Chi-squared analysis generated p values for the relationship between variables. Findings were presented using frequency tables, bar charts and pie charts (see Chapter five). These comprise the distribution of respondents according to senatorial zone and health facility; socio-demographic variables, previous pregnancy; previous birth experiences, occupation during previous birth; support, previous infant feeding, factors that influence infant feeding, breastfeeding intention; and, breastfeeding practices as a function of selected independent variables.

Logistical regression analysis of breastfeeding practices as a function of selected variables was performed at 95% confidence interval and findings were used to test the stated hypotheses. (See section 1.8 for hypotheses).

Analysis was done taking into consideration the constructs of the Health Belief Model.

3.11 Pilot study

A pilot study was conducted. It is commonly recommended that 10% of the proposed sample be used as the sample size for pilot studies (Brink and Wood, 1998). Johanson and Brooks (2009) recommended 30 participants from the study population as the minimum for a pilot study preceding a survey. Hill (1998) recommended 10-30 participants for a pilot study. As this study was not intended to develop an instrument or to determine the statistical parameters for calculating the sample size of a full scale study, the researcher simply utilized 24 women who met the inclusion criteria. This was a feasibility study that enabled the researcher to refine the process of research activities and to get an idea of the content of the data before conducting the main survey. Analysis of the results of the pilot study confirmed that all the stated objectives and questions had been adequately attained and answered respectively. The data from the pilot study was not used in the larger survey, in order to avoid contamination of data (Gilbert, 2011).

3.12 Ethical issues

3.12.1 Permission to conduct research

In line with the Declaration of Helsinki, which mandates medical researchers involving human subjects to submit their research protocols to an ethical committee for consideration (World

Medical Association [WMA], 2013), a proposal was submitted to the University of Cape Town's Faculty of Health Sciences Human Research Ethics Committee for clearance prior to conducting the study. Approval for this study to be conducted was granted (HREC REF 316/2014) (Appendix 1). Permission was further requested from, and granted by, the Plateau State Ministry of Health to conduct the study (Appendix 2).

3.12.2 Autonomy

The WMA Declaration of Helsinki states that no competent individual may be enrolled in a research study unless he/she freely agrees (WMA, 2013). Participants in this study participated voluntarily without any interference, i.e. participation was based on free will and self-determination (WMA, 2013). Information regarding participation was made clear in the information sheet (Appendix 3).

3.12.3 Consent

The researcher provided adequate information about himself and the intended research in an introductory letter. There was a brief description of the study, stating what was expected of the participants. The benefits of the study and risk management were explained. In this study, the risk was that of disclosing private information and recording names in the research.

Participants were assured of confidentiality and anonymity. It was ensured that no information provided by participants was linked to them. It was also made clear to prospective participants that their participation was voluntary, and that they were free to withdraw at any time.

Participants were given the opportunity to ask questions. The researcher assured participants of his willingness to answer these questions. The local contact details of the researcher as well as the contact details of the supervisor and the Chair of the Human Research Ethics Committee of the UCT Faculty of Health Sciences were given to the participants (Appendix 3). This information letter was followed by a consent form, which was signed by the participants, declaring that they understood all the information given (Appendix 4).

3.12.4 Confidentiality

In order to minimize the impact of the study on the mental and social integrity of the subjects (WMA, 2013), participants were assured, prior to the study, that their personal information would remain confidential. Participants were not required to give their names and information was not linked to them personally in the survey.

3.12.5 Non-maleficence

There is no potential physical harm associated with this study. However, there may be a perception of intruding into participants' private life. Information gathered was thus kept in confidence and only used for research purpose. No information was linked directly to any of the participants. Further, the respondents were made comfortable as much as possible during the data collection period.

3.12.6 Beneficence

The outcome of the study will be beneficial for women and their children because it will contribute to planning future interventions that will promote breastfeeding particularly and maternal and child health in general. Although the participants in this study did not benefit directly, the information they provided would benefit women and children in the future. This was clearly stated in the information sheet, regarding their participation in the study. It also aimed to provide a baseline for further studies. It is expected that the findings from this study will provide a helpful baseline for future – and better – interventions promoting breastfeeding, which will hopefully increase the proportion of women that will breastfeed exclusively and for a longer duration, thus ensuring that their infants will enjoy the numerous benefits of breastfeeding.

3.12.7 Justice

In order to ensure justice and fairness, all women attending antenatal clinic who met the inclusion and exclusion criteria had an equal chance of being selected for the study.

3.13 Conclusion

The setting of the study, the target population, the study design, and the relevant ethical issues were all presented in this chapter. To recap, the study was conducted in Plateau State, Nigeria, which Hausa population of over 3 million people. The state is divided into 3 senatorial zones with a total of 17 local government areas spread out across these three zones. Healthcare facilities in the state are divided into primary, secondary and tertiary facilities, based on the nature of the services rendered; they are owned by government, by private individuals and by voluntary organizations. It was decided to design the study as a cross-sectional study, in order to retrieve information from women who met the inclusion criteria. The data was analysed by means of descriptive and inferential statistics. All the relevant aspects of the principles guiding medical research involving human subjects were carefully observed in this study.

Chapter four: Instrument modification, validation and translation

4.0 Introduction

This chapter presents the testing, modification and validation of the instrument used in this study (viz. the questionnaire). The validation process is discussed in detail. This chapter also discusses how the instrument was tested for reliability and later translated into a local Nigerian language, viz. Hausa.

4.1 Background

Using a valid instrument for data collection is important in ensuring that the research aim and objectives are achieved. Validity ensures that an instrument measures what it is intended to measure. No instrument is completely valid, but it is possible to determine the degree of validity, rather than only ascertaining if validity exists (Burns and Grove, 2007; Lynn, 1986). Since validity may vary from sample to sample and from one situation to another, it means that validity testing must evaluate the use of an instrument for a specific group or purpose (Burns and Grove, 2007). An instrument that was used for a particular purpose in one part of Nigeria may not be valid for the same purpose in another part of Nigeria. This realisation informed the validation process for the instrument that was adopted. The instrument used had originally been developed for an infant feeding survey in Ireland, but it was adapted for use in a Nigerian setting.

Of the over 35 terms used to describe the different kinds of validity (Brown, 1980 as cited by Lynn, 1986), only content, criterion-related and construct validities are commonly used (Drost, 2011). Content validity and the reliability coefficient thus guided the process of validation of this instrument because these criteria were able to establish a statistical value of the logic relationship between items of an instrument and its purpose (Lynn, 1986) and because the instrument was not a newly developed one. Lynn (1986) described two types of instruments that researchers develop in 2 stages to ensure a high degree of validity, namely, cognitive and affective instruments.

A cognitive or affective instrument is usually developed in two stages.

4.1.1 Development stage

This stage involves the identification of the content domain by conducting an extensive literature review. In this case, for example, because an instrument is being developed to assess the determinants of exclusive breastfeeding, all determinants need to be identified and categorized. The next step of the development stage involves sampling and generating relevant items from the content domain and assimilating and sorting these items into useable form.

4.1.2 Judgment and quantification stage

This involves the judgment and quantification of the content validity (CV) of items, followed by the judgment and quantification of the CV of the instrument (Lynn, 1986).

4.2 Content validity

This section looks at the process of validating the instrument for data collection. The development stage and the judgement and quantification stage are presented , and the results discussed.

4.2.1 Development stage

The instrument for data collection in this study was derived from an instrument used by Begley, Gallagher et al (2008) to assess infant feeding in Ireland. The aim of their study was to “examine infant feeding in Ireland, determine the rate and duration of breastfeeding and the factors influencing women to breastfeed” (Begley et al, 2008: 27). The 135 item questionnaire was administered in three phases. The first phase was between birth and 48 hours; the second phase was between three and four months after birth, while the final phase was between six and seven months after birth. Women answered an average of 45 questions per phase. According to the objectives of the current study, 78 items were drawn from the Irish questionnaire. After a two-phase departmental review process, a total of 71 items were ultimately included.

4.2.2 Judgment and quantification stage

Lynn (1986) recommended that three to ten experts should be consulted in the judgement and quantification stage of determining the validity of the instrument’s content. Three experts may be used, where accessible and agreeable experts are difficult to locate, and ten where they are available. In this case, five judges were regarded as sufficient for the quantification phase,

because the instrument was not newly developed but adapted from a similar study. Three of the judges were registered nurses from the University Teaching Hospital in Jos who were trained in the Baby Friendly Hospital Initiative. The remaining two were lecturers in the Department of Nursing Science, University of Jos; one of these was a midwifery lecturer, while the other was a medical sociologist who had conducted a study on the social dimensions of exclusive breastfeeding and its impact on child survival and development (Ajayi, Hellandendu et al, 2011).

The instrument for data collection (Appendix 5) was presented to the panel of five judges, instructing them to assess its relevance, clarity, simplicity and ambiguity on an ordinal Likert scale of four. The judges were also given a guide on how to carry out the assessment using the information presented in Table 4.1 and the aim and objectives of this study.

Table 4.1 shows the criteria for measuring content validity.

Characteristics	1	2	3	4
Relevance	Not relevant	Item needs some revision	Relevant but needs minor revision	Very relevant
Clarity	Not clear	Item needs some revision	Clear but needs minor revision	Very clear
Simplicity	Not simple	Item needs some revision	Simple but needs minor revision	Very simple
Ambiguity	Doubtful	Item needs some revision	No doubt but needs minor revision	Meaning is clear

Table 4.1: Criteria for measuring content validity (Yalghmale 2003)

Content Validity Index (CVI) and the coefficient of reliability guided the validation of the instrument. Lynn (1986) focused on relevance as the only determinant of content validity, but Yalghmale (2003) added 3 other determinants, namely, simplicity, clarity and ambiguity. According to Polit (2006) and Lynn (1986), CVI refers to the proportion of items that score 3 or 4 on a scale of 4. The items that had a CVI of over 0.75 would remain in the questionnaire, based on their relevance, clarity, simplicity and lack of ambiguity (Yaghmale, 2003). A CVI score of 0.80 or higher is acceptable too (Yaghmale, 2003). The judges were provided with the scoring system as follows: 1= not relevant, 2= item needs some revision, 3= relevant but needs minor revision and 4 = very relevant. The same scoring applied to clarity, simplicity and ambiguity (Yaghmale, 2003).

4.2.3 Results

The results of this assessment by the individual judges (see Appendices 6 to 10) were analysed, and the CVI of each item was determined as a proportion of judges who had judged an item valid (thus obtaining a score of 3 or 4). The CVI of all items with respect to relevance, clarity, simplicity, and ambiguity is presented in Table 4.2.

ITEM	RELEVANCE	CLARITY	SIMPLICITY	AMBIGUITY
1	0.80	1.00	1.00	1.00
2	1.00	1.00	1.00	1.00
3	0.80	0.80	0.80	1.00
4	1.00	1.00	1.00	1.00
5	1.00	1.00	1.00	1.00
6	1.00	1.00	1.00	1.00
7	1.00	1.00	1.00	1.00
8	0.80	1.00	1.00	0.80
9	0.60	0.80	0.80	0.80
10	1.00	1.00	1.00	1.00
11	1.00	0.80	0.80	0.80
12	1.00	0.80	1.00	0.80
13	1.00	1.00	1.00	1.00
14	1.00	1.00	1.00	1.00
15	1.00	0.80	0.80	0.80
16	1.00	0.80	0.80	0.80
17	1.00	1.00	0.80	0.80
18	1.00	1.00	1.00	1.00
19	1.00	0.60	0.60	0.40
20	1.00	1.00	1.00	1.00
21	1.00	1.00	1.00	1.00
22	1.00	1.00	1.00	1.00
23	1.00	1.00	1.00	1.00
24	1.00	1.00	1.00	1.00
25	0.60	0.80	0.80	0.80
26	0.80	0.80	0.80	0.80

Table 4.2 continue

ITEM	RELEVANCE	CLARITY	SIMPLICITY	AMBIGUITY
27	1.00	1.00	1.00	1.00
28	1.00	1.00	1.00	1.00
29	0.80	0.80	0.80	0.80
30	1.00	1.00	1.00	1.00
31	1.00	0.80	1.00	0.80
32	0.80	1.00	1.00	1.00
33	0.80	0.80	0.80	0.80
34	0.60	0.80	0.80	0.80
35	0.80	0.80	0.80	0.80
36	0.80	0.80	0.80	0.80
37	1.00	1.00	1.00	1.00
38	0.80	0.80	0.80	0.80
39	0.80	1.00	1.00	1.00
40	0.80	1.00	1.00	1.00
41	0.80	1.00	1.00	1.00
42	1.00	1.00	1.00	1.00
43	1.00	0.80	0.80	0.80
44	1.00	1.00	1.00	1.00
45	1.00	0.60	0.80	0.60
46	1.00	1.00	1.00	1.00
47	1.00	0.80	1.00	0.80
48	1.00	1.00	1.00	1.00
49	1.00	1.00	0.80	0.80
50	1.00	0.80	1.00	0.80
51	0.80	1.00	1.00	1.00
52	1.00	0.80	0.80	0.80
53	0.80	0.60	0.60	0.60
54	1.00	1.00	0.80	1.00
55	0.80	0.80	0.80	0.80
56	1.00	1.00	1.00	1.00
57	1.00	1.00	1.00	1.00
58	1.00	1.00	1.00	0.80
59	1.00	1.00	1.00	0.80
60	1.00	1.00	1.00	1.00

Table 4.2 continue

ITEM	RELEVANCE	CLARITY	SIMPLICITY	AMBIGUITY
61	1.00	1.00	1.00	1.00
62	0.80	0.80	0.80	0.80
63	1.00	1.00	1.00	1.00
64	1.00	1.00	1.00	1.00
65	1.00	1.00	1.00	1.00
66	1.00	1.00	1.00	1.00
67	1.00	0.80	1.00	1.00
68	1.00	0.80	1.00	1.00
69	0.80	0.80	0.80	0.80
70	0.60	0.40	0.40	0.40
71	1.00	0.80	0.80	0.80

Table 4.2 Content validity index of each item for relevance, clarity, simplicity and ambiguity.

Table 4.2 shows the CVI of every item. CVI of each item = the proportion of experts who rated the item content valid (score of 3 or 4) (Lynn, 1986, Yaghmale, 2003). In other words, it refers to the number of judges who scored an item as valid, divided by the total number of judges.

The CVI of the entire instrument was calculated after determining the CVI of each of the items. The CVI of the questionnaire is the proportion of total items rated as valid (≥ 0.75), divided by the total number of items (Lynn, 1986).

- CVI (Relevance) = $67/71 = 0.94$ meaning that 94% of items had a CVI of ≥ 0.75
- CVI (Clarity) = $67/71 = 0.94$
- CVI (Simplicity) = $68/71 = 0.96$
- CVI (Ambiguity) = $67/71 = 0.94$

4.2.4 Discussion

The CVI for relevance, clarity and ambiguity (0.94 each) of all the items assessed was high, indicating that 94% of items were judged valid, relevant, clear and unambiguous by the experts. The CVI for simplicity (0.96) was higher than were the values for the other three components. Four of the items were judged invalid because they were irrelevant (4), unclear (4), doubtful (4) and complex (3). Lynn (1986) suggested that items with minimum agreement

of experts may be eliminated or revised. If there are many such items, the instrument may need to be re-evaluated by the same experts after it has been revised, so as to obtain sufficient content validity. Yaghmale (2003) posited that a CVI of 0.80 or higher was accepted and considered sufficient. Since the CVI for all the components was more than 0.80, it is indeed considered sufficient, and the items that received minimum agreement in terms of their relevance were removed (items 9, 25, 34 and 70). The remaining relevant items (67 items) were checked for clarity, ambiguity and simplicity during the pilot study. The pilot study indicated that the items were clear because the respondents provided the required information.

4.3 Reliability test and internal consistency.

Reliability is concerned with how consistently the measurement technique is able to measure a variable or a concept, that is, it measures the repeatability of the instrument (Burn and Grove, 2003; Drost, 2011). Cronbach's Alpha reflects the internal consistency within an instrument and measures how well a set of items is able to measure a particular behaviour or characteristic. Ten questionnaires completed by pregnant women who satisfied the inclusion criteria were used for this reliability test. Two other women, who satisfied the inclusion criteria, voluntarily completed a questionnaire each. Each of these women (2) completed another questionnaire after two weeks for the test-retest of the revised questionnaire.

The reliability test was done using the test-retest method and Cronbach's Alpha. Cronbach's Alpha was determined to be 0.81, while the reliability coefficient was 0.76. These results suggest that the instrument is internally consistent and reliable for this population.

4.4 Translation

There are many languages spoken in Plateau State, with Hausa being the most predominant. Hausa is the language that is commonly used for communication in this setting, and is one of the three major languages in Nigeria. The researcher anticipated that most of the respondents might not understand English to the level required to provide the information needed, therefore it was necessary to translate the validated instrument into Hausa. This was done as follows:

- The validated instrument (Questionnaire A(Appendix 11)) was given to a person who was fluent in both the English language and in the local language (Hausa) to translate the instrument into Hausa.

- Thereafter, the Hausa version (Questionnaire B (Appendix 12)) was given to another person who was also fluent in both languages to translate it back into English.
- The new English version (Questionnaire C (Appendix 13)) was compared with Questionnaire A.
- The comparison revealed that some of the items in Questionnaire B needed to be revised.
 - The so-called vacuum extractor in option “C” of item 9 was translated to mean “a machine that assists delivery”. This is because there is no Hausa word for “vacuum extractor”.
 - Option “D” of item 10 of the Hausa instrument (Questionnaire B) was translated to mean normal analgesia or normal pain killer instead of general anaesthesia. Option “D” was thus changed to “*maganin sa barci*”, which means “anaesthesia”.
 - Item 14 of the Hausa version (Questionnaire B) was translated to mean a different thing from the original item. The translation reads “at what time interval do you feed your baby” instead of “time of commencement of feeding”. The item was corrected.
 - Option “E” of item 30 was also reviewed. The option was translated as “baby not matured enough to feed” instead of “baby was not feeding”.
- Other items were checked to ensure that the translation was correct. Consequently, a new instrument emerged (Questionnaire D (Appendix 14)), which was the corrected version of Questionnaire B.

In conclusion, then, Questionnaires A (English) and D (Hausa) were used for data collection in the intended study.

4.5 Conclusion

This chapter discussed how the instrument used for data collection was adapted from a questionnaire that had been used in a previous study investigating a similar subject, and how it was validated with the help of five judges. The reliability test as well as the translation and back-translation process was presented.

Chapter five: Presentation of the Findings

5.0 Introductions

Data collected from this survey was analysed using SPSS, and the results of the data analysis are presented in this chapter, according to the constructs of the Health Belief Model. The distribution of the participants is presented first (Section 5.1), which is followed by information about the health behaviour (i.e. their breastfeeding practices) in Section 5.2. Thereafter, the modifying factors (namely, the participant profile and the determinants of infant feeding) (Section 5.3), cues to action and self-efficacy (Section 5.4), the participants' breastfeeding intentions (Section 5.5) and their personal perceptions with regard to infant feeding (Section 5.6) are presented. The participant profile should normally be presented first; this was presented where it is, because of its location in the Health Belief Model.

All information presented in charts (bar and pie charts), are in percent.

5.1 Distribution of participants

A total number of 864 questionnaires were distributed equally across the three senatorial zones of the state, of which 763 were retrieved, representing a response rate of 88.3%.

Table 5.1 below shows the distribution of respondents according to the type of health facility and the senatorial zone.

Type of health facility	Senatorial zone			Total
	Northern	Central	Southern	
Primary	138	118	121	377(49.4%)
Secondary	135	123	128	386(50.6%)
Total	273(35.8%)	241(31.6%)	249(32.6%)	763(100%)

Table 5.1: Distribution of respondents (N=763)

The table reveals that 377/763 (49.4%) of the respondents were recruited from primary facilities and 386/763 (50.6%) were recruited from secondary facilities. The table also shows that 273/763 (35.8%), 241/763 (31.6%), and 249/763(32.6%) were recruited from the northern, central and southern senatorial zones respectively. Data presented have various denominators because of the variation in responses to items.

5.2 Health behaviour: Previous infant feeding practices

This section presents information about the initiation and frequency of feeding of the previous baby (given that all the participants had had at least one child before having the current one), the kind of food that they gave their babies for their first feed, what and how they fed their babies at discharge or 48 hours after birth, the rate of exclusive breastfeeding, and the duration of breastfeeding the previous baby.

5.2.1 Initiation and frequency of feeding

The findings relating to initiation of feeding and the frequency of feeding are presented in this section. Participants were asked to recall the time when they commenced breastfeeding after the birth of their previous baby and how frequently they fed that baby. This information is helpful in discussing infant feeding in relation to the early initiation of feeding, namely, within the first hour, and in relation to feeding on demand, as recommended by the World Health Organization's (WHO) Baby-Friendly Hospital Initiative (WHO, 2005).

Figure 5.1 presents the results about the time when mothers first began to breastfeed their babies after birth.

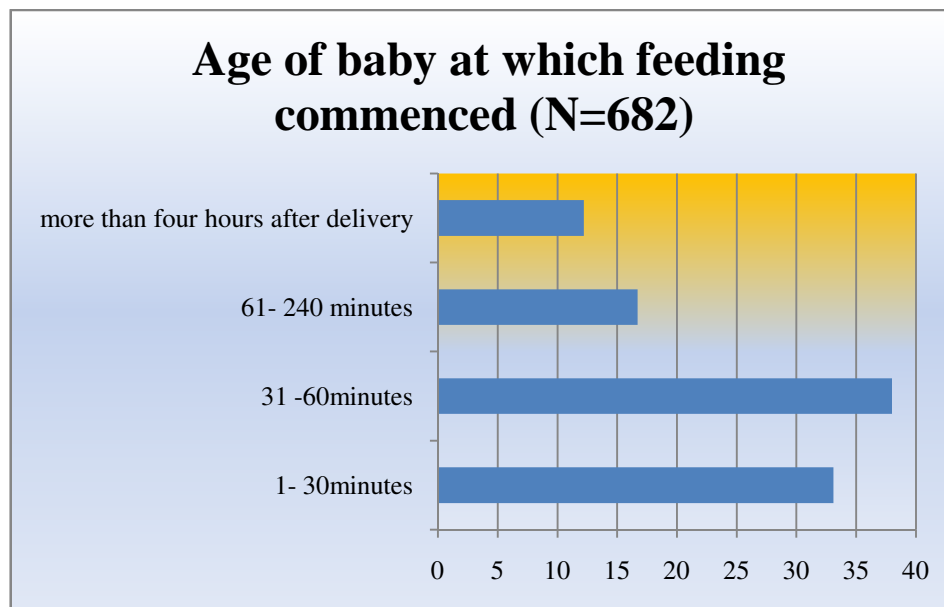


Figure 5.1: Age of baby at first feed.

The figure shows that 226/682 (33.1%) initiated feeding within the first 30 minutes of birth, 259/682 (38%) between 30 minutes and the first hour of birth, 114/682 (16.7%) between one hour and four hours after birth, and 83/682 (12.2%) breastfed their children for the first time more than four hours after delivery.

Figure 5.2 below presents information about the frequency of feeding in a day. It shows the proportion of respondents who fed their babies on demand, as recommended by WHO (WHO, 2005).

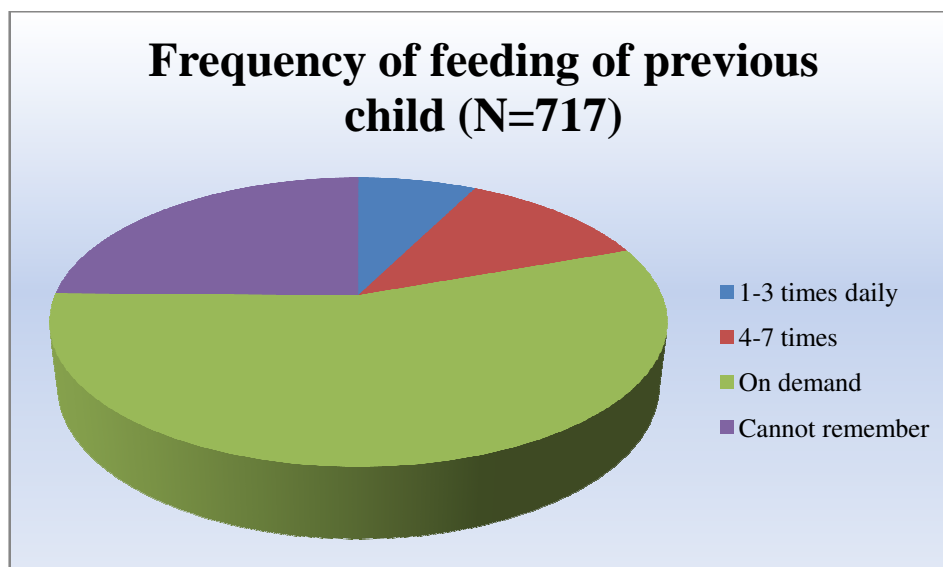


Figure 5.2: Percentage distribution of frequency of infant feeding

Figure 5.2 shows that 53/717 (7.4%) of participants reported feeding their children one to three times daily, 87/717 (12.1%) fed four to seven times a day, 399/717 (55.7%) – more than half of the participants – fed their children on demand and 178/717 (24.8%) – just under a quarter of participants – reported that they could not remember how frequently they fed their previous children.

5.2.2 Prelacteal feeding

The participants were asked what kind of food they gave to their infant children for the first feed, or whether they gave them breast milk from the start. The information presented herein thus highlights the prevalence of prelacteal feeding in the study population. UNICEF (2013) identified prelacteal feeding as one of the causes why women delayed the initiation of breastfeeding and as one of the causes of childhood diseases.

Table 5.2 presents the type of feed that the infants had as the first feed and the reasons given for this.

Item	Frequency	Percentage
Type of feed at first feed	(N=723)	
Breast milk	664	91.8
Infant formula	48	6.7
Other e.g. water, herbs, glucose	11	1.5
Reasons for this feeding	(N=675)	
Health challenges/delay feeding initiation	54	8.0
I make inadequate breast milk	30	4.4
It is a normal food at this time	103	15.3
Advised in hospital	132	19.5
It is best for my baby	330	48.9
Other	26	3.9

Table 5.2: Type of feed given as first feed and reasons.

The type of feed given to their infant children for their first feed is presented in Table 5.2 . The vast majority of 664/723 (91.8%) gave their infants breast milk, 48/723 (6.7%) gave infant formula and 11/723 (1.5%) gave other feeds like water, water and glucose, and herbs. A small percentage (54/675 (8.0%) gave other types of feeds, because of health challenges experienced by themselves or by their babies, or because they had difficulty in initiating breastfeeding; 30/675 (4.4%) believed that their breast milk was inadequate, 103/675 (15.3%) believed that is a normal food to give babies at this time, 132/675 (19.5%) were advised to give the particular kind of feed in the hospital, 330/675 (48.9%) believed it was best for their baby ,while 26/675 (3.9%) mentioned two or more of the reasons mentioned earlier.

5.2.3 Feeding at discharge and within 48 hours after birth

The participants were asked what kind of food they gave their newborn infants – at discharge in the case of women who had delivered in hospital, or within 48 hours after birth, in the case of women who had delivered their babies at home. (Figure 5.3)

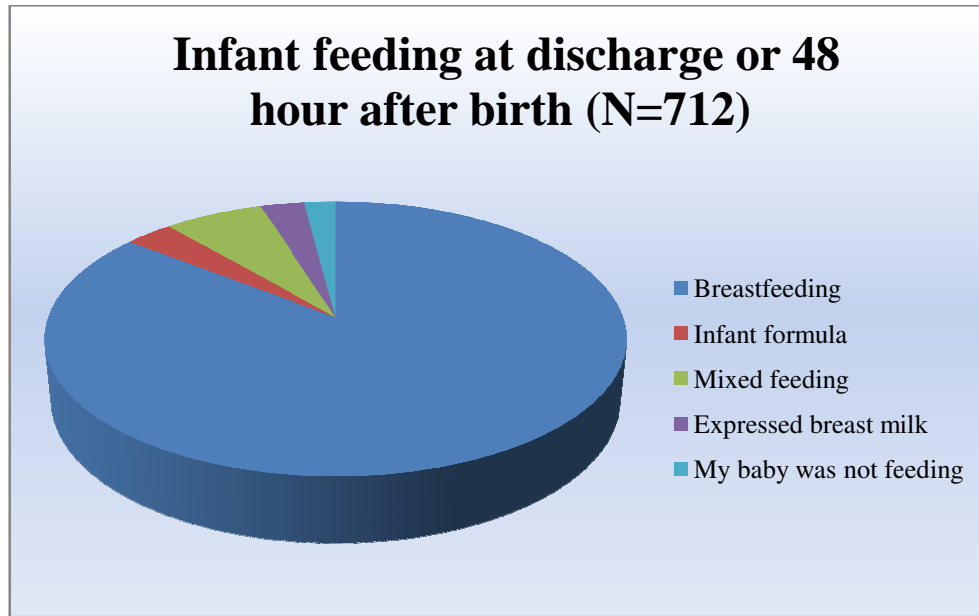


Figure 5.3: Infant feeding at discharge/ 48 hours after delivery.

According to the above figure, at discharge or within 48 hour after birth, the vast majority of participants (609/712 or 84.4%) were exclusively breastfeeding their babies. A far smaller percentage (22/712 or 3.1%) were feeding them infant formula; 45/712 (6.3%) were mixed feeding, and 20/712 (2.8%) were giving expressed breast milk at the time of being discharged from hospital. Women who reported that their babies were not feeding at discharge or within 48 hours after delivery comprised 14/712 (2%) (these women might have lost their babies by this time or they might have been moved to other units), while 10/712 (1.4%) said that they could not remember.

5.2.4 Exclusive breastfeeding rate and associated factors

The participants were asked what they fed their infant children, at one week, six weeks, and 12 weeks and 24 weeks after birth; the results are presented in this section. The duration of exclusively breastfeeding, the reasons for this duration, and reasons for given anything other than breast milk in the early days, are also presented below.

Figure 5.4 below presents the feeding history of infants at different tiepoints up to 6 months of age. Women were asked to recall information about feeding practices at various times in order to identify exclusive breastfeeding pattern within this period as well as the use of mixed feeding. The values for exclusive breastfeeding at discharge or 48 hours after birth in the figure below include women who gave expressed breast milk.

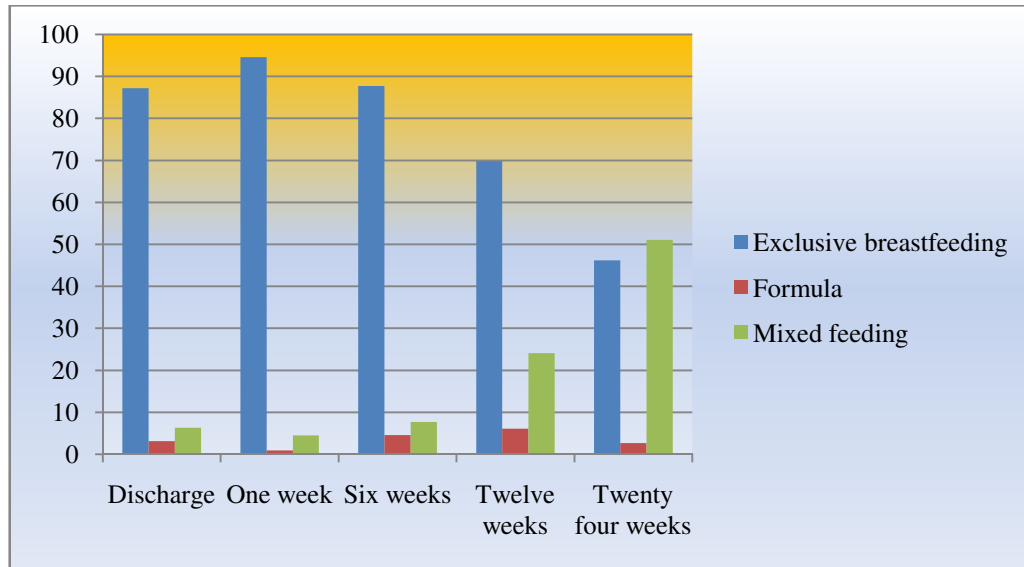


Figure 5.4: Infant feeding at discharge, one week, six weeks, twelve weeks and twenty-four weeks.

The figure above shows that, within one week of birth, the vast majority of 629/665 (94.6%) were exclusively breastfeeding, while 6/665(0.9%) were exclusively formula feeding and 30/665 (4.5%) were mixed feeding. At six weeks, a similarly high number of 534/609 (87.7%) were giving breast milk only, 28/609 (4.6%) were giving only infant formula, while 47/609 (7.7%) were mixed feeding. At 12 weeks, over two thirds of participants – 409/586 (69.8%) – were exclusively breastfeeding, 36/586 (6.1%) were exclusively formula feeding, and 141/586(24.1%) gave both breast and formula milk and other feeds. At 24 weeks after birth, however, less than half of the participants – 277/599 (46.2%) – were giving breast milk exclusively, whereas 16/599 (2.7%) were formula feeding while 306/599 (51.1%) were mixed feeding.

Figure 5.5 presents the duration of exclusive breastfeeding among the study population. This information was obtained by asking respondents to state how old their babies were, before they first gave them anything other than breast milk.

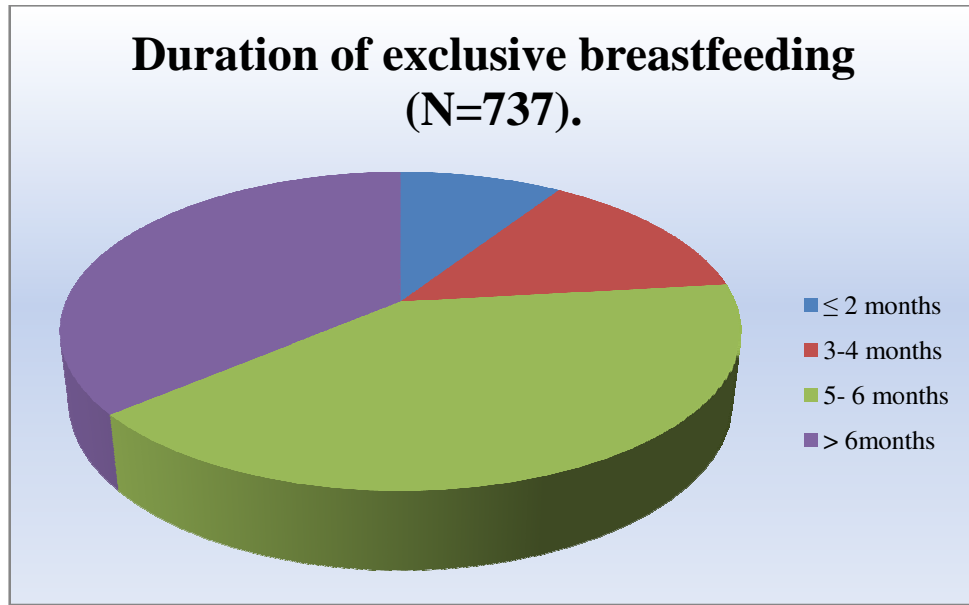


Figure 5.5: Duration of exclusive breastfeeding

The average duration of exclusive breastfeeding was 5.5 (SD ± 2.4) months.

Figure 5.5 shows that only a small number of participants, viz. 68/737 (9.2%), gave their children feeds other than breast milk within the first two months of life; between three and four months this figure rose to 103/737 (14%), and between five and six months, it was even higher, viz. 299/737 (40.6%); interestingly, it dropped again after 6 months, to 267/737 (36.2%).

Figure 5.6 presents information about the reason for the duration of exclusive breastfeeding, as reported above.

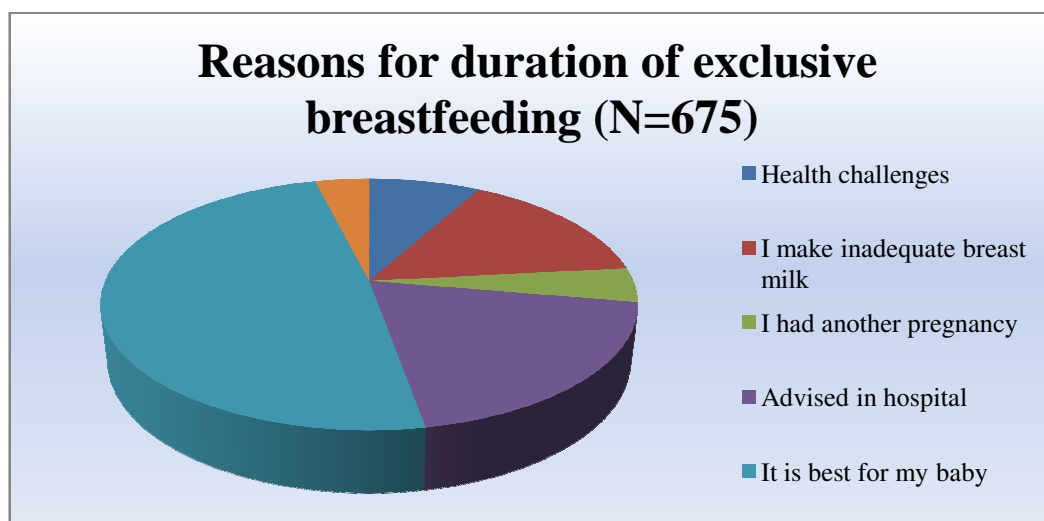


Figure 5.6: Reasons for duration of exclusive breastfeeding (N=675)

Figure 5.6 shows the various reasons why women practiced exclusive breastfeeding for a particular duration, and why they stopped breastfeeding. According to the above figure, 103/675 (15.3%) said it was because they produced inadequate breast milk, 54 (8%) said it was because of health reasons and 30/675 (4.4%) said they stopped breastfeeding because they had fallen pregnant again, 132/675 (19.5%) said they had been advised in the hospital to give, 330/675 (48.9%) felt that it was best for their children, while 26/675 (3.9%) gave various reasons like “I just feel like giving”. Others said that they stopped breastfeeding because they had to return to school – in the case of some of the young mothers who were students or school pupils – or because their babies refused to suck.

Figure 5.7 summarises the reasons for giving other types of feeds in the early days, which helps in understanding the prevalence of mixed feeding in the study population.

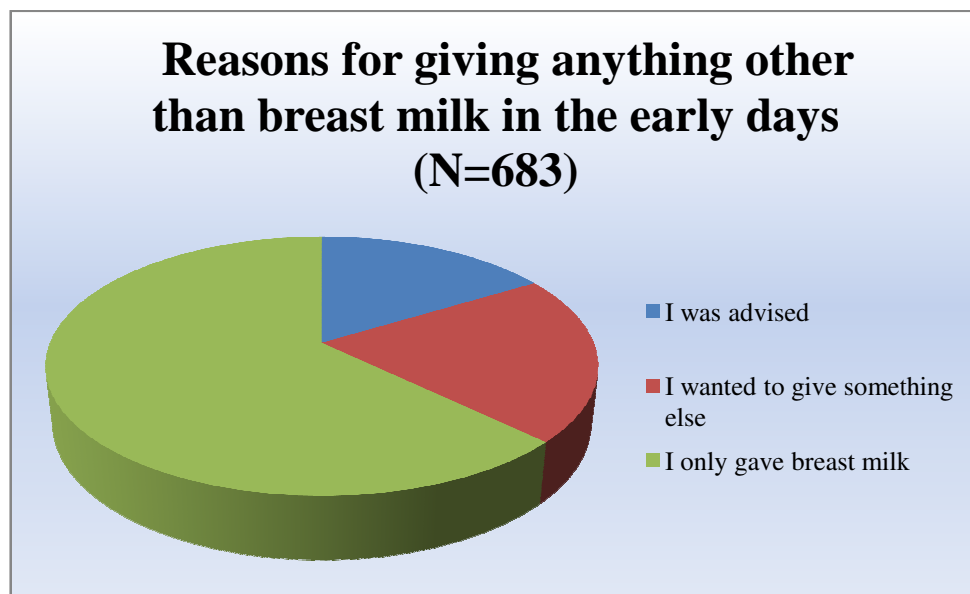


Figure 5.7: Reasons for giving infants anything other than breast milk in the early days.

The figure above shows that, in the early days, 111/683 (16.3%) said that they had been advised by health professionals or family and friends to give something else to their babies: 143/683 (20.9%) said they themselves wanted to give something else to their infants, and the remaining 429/683 (62.8%) said they never gave anything other than breast milk in the early days.

5.2.5 Overall duration of breastfeeding and infant feeding of previous children

The participants were asked to indicate how long (in months) they had breastfed their previous babies, and how many months after delivery they stopped breastfeeding their babies.

Figure 5.8 presents the results information in this regard.

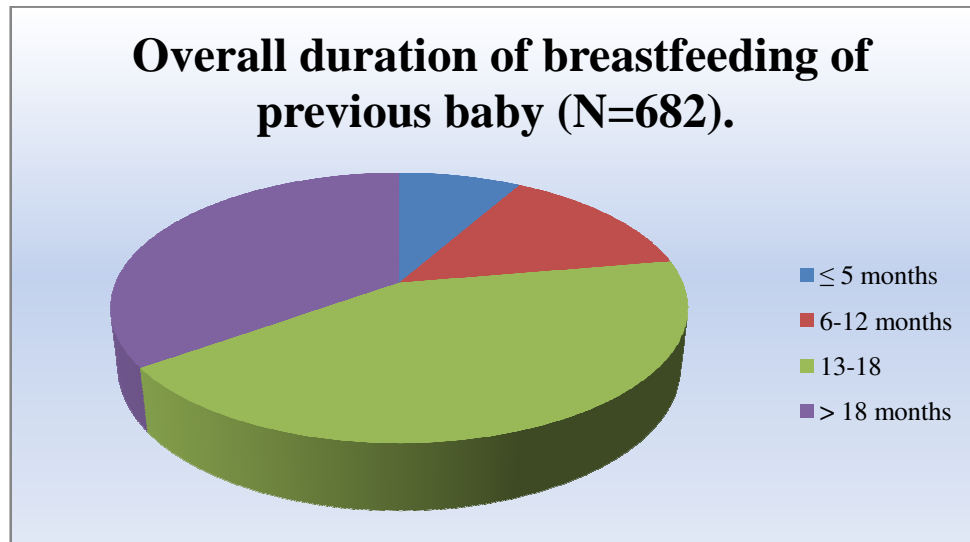


Figure 5.8: Overall duration of breastfeeding of previous baby.

Figure 5.8 shows the total duration (in months) of breastfeeding. The mean duration of all breastfeeding (any breastfeeding) for the previous child was 15 (SD \pm 4) months. The findings show that 56/682 (8.2%) of the respondents breastfed for a total duration of up to five months, 96/682 (14.1%) breastfeed for six to 12 months, 292/682 (42.8%) for 13 to 18 months, and 238/682 (34.9%) breastfed their previous baby for more than 18 months.

Figure 5.9 illustrates the findings with regard to the respondents' views about how long they had breastfed their previous baby.

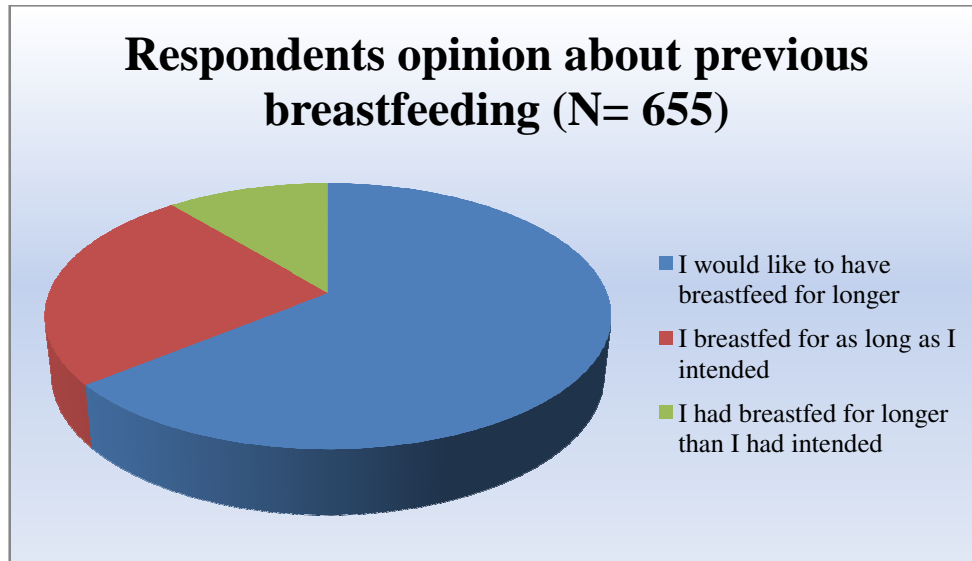
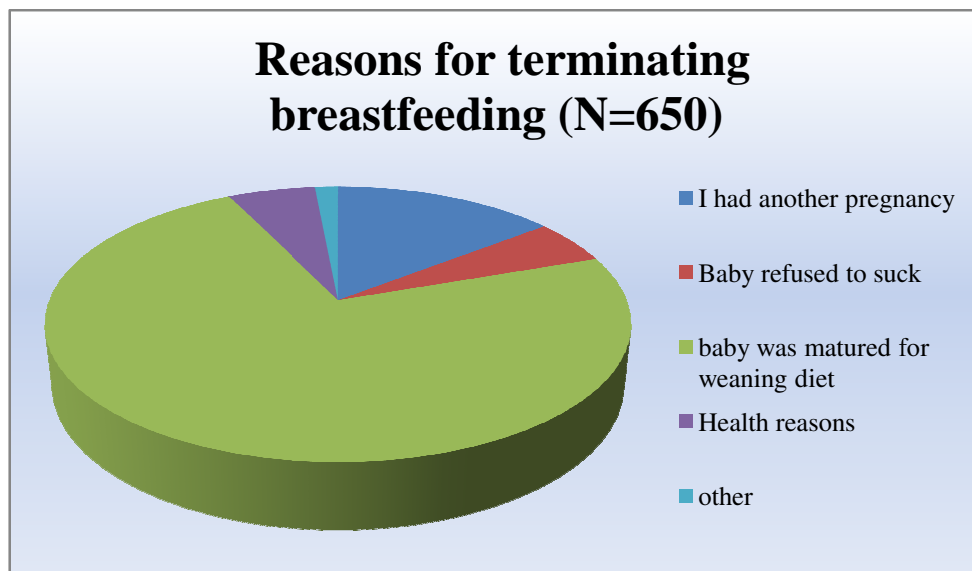


Figure5.9: Percentage distribution of respondents according to views about previous breastfeeding

The above figure shows that over half of the women (367/655 or 56.1%) said they had breastfed their previous babies for as long as they intended; about a third of the women (204/655 or 31.1%) would like to have breastfed for longer, and 84/655 (12.8%) had breastfed for longer than they intended.

Figure 5.10 shows the reasons for terminating breastfeeding.



The women who started and eventually stopped breastfeeding gave various reasons for stopping. Figure 5.10 shows that the vast majority (475/650 or 73.1%) said that they had

decided to wean their babies; 94/650 (14.5%) said that they stopped because they unexpectedly fell pregnant again; 34/650 (5.2%) attributed it to the baby's refusal to suck, and 37/650 (5.7%) attributed it to health problems. A small percentage (10/650 or 1.5%) said it was the nature of their job, that they had to return to school (in the case of the school pupils and students) and that they preferred not to breastfeed their infants.

The participants were requested to provide information about the feeding habits of their previous four children in the first six months of their children's lives. Figure 5.11 illustrates the feeding history with regard to the participants' previous children;

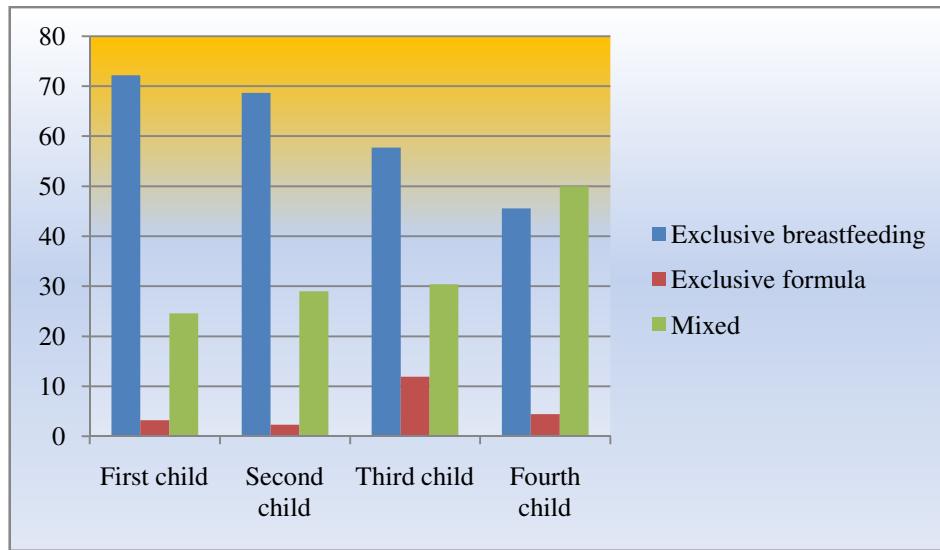


Figure 5.11: Distribution of respondents according to infant feeding of previous children in the first six months.

Women were asked to describe how they fed their previous children in the first six months of life, and the results are summarised in Figure 5.11. For the first child, the proportions were as follows: 475/658 (72.2%) breastfed, 22/658 (3.2%) formula fed and 162/658 (24.6%) mixed fed. For the 2nd, 3rd and 4th children, 270/393 (68.7%), 165/286 (57.7%) and 82/180 (45.6%) respectively breastfed in the first six months. The number of women who reported mixed feeding their 1st, 2nd, 3rd and 4th children were 162/658 (24.6%), 144/393 (29%), 87/286 (30.4%) and 90/180 (50%) respectively.

5.3 Modifying factors

The participants' profiles and the relevant determinants of infant feeding are presented in this section. These determinants can be divided into two major sections, namely: (1) factors that

may influence infant feeding, and (2) breastfeeding practices as a function of selected variables. The former are divided into three sub-sections, namely: (1) information related to previous pregnancy, (2) information related to previous delivery, (3) information relating to the participants' occupation just before delivery, and the occupation of their spouses.

5.3.1 Modifying factor 1: participants profile

The socio-demographic characteristics of the respondents are presented herein. Table 5.3 presents information about their age, gestational age and parity. Table 5.4 contains information about their level of education and marital status, while Table 5.5 presents information about their occupation and the monthly income of the family.

Table 5.3 shows the age of the respondents, their gestational age and parity. The mean age of participants was 27(SD±5.2) years.

Characteristics	Frequency	Percentages
Age (years)	(N= 757)	
≤ 20	96	12.7
21-30	464	61.3
31-40	175	23.1
≥41	22	2.9
Gestational age (in weeks)	(N= 560)	
1-12weeks	48	8.6
13-24 weeks	192	34.3
25weeks and more	320	57.1
Total	560	100.0
Parity	(N=722)	
1-2	458	63.4
3-4	196	27.1
5-6	59	8.2
More than 6	9	1.2

Table 5.3: Distribution of respondents according to age, gestational age and parity.

Table 5.3.reveals that 96/757 (12.7%) of respondents were ≤ 20 years. Moreover, 560/757 (74.0%) were below 30 years of age, 175/757 (23.1%) were between 31 and 40 years, while 22/757(2.9%) were above 40 years of age.Of the participants interviewed at the various clinics,

48/560 (8.6%) were in their first trimester (1-12 weeks); 192/560 (34.3%) in their second (13-24 weeks) and 320/560 (57.1%) in their third trimester (25 weeks and above).

The average number of children per respondent was 2.4 (SD±1.6) children, with 458/722 (63.4%) having one to two children, and 196/722 (27.1%) having three to four children; 56/722 (8.2%) had five to six children, while 9/722 (1.2%) had more than six children.

Table 5.4 shows the relationship between maternal age and level of education.

	Highest level of education						
Maternal age (years)	No formal education	Primary	Secondary	Tertiary	Total	X ²	P value
≤20	2	11	73	8	94	76.34	<0.001
21-30	15	68	205	166	454		
31-40	17	24	69	65	175		
≥41	2	8	1	11	22		
Total	36	111	348	250	745		

Table 5.4: Maternal age by level of education of respondents

The table shows that 8.5% (8/94) of women ≤20 years have had a tertiary education; 36.6% (166/454) of women who were 21-30 years had tertiary education; 37.1% (65/175) of women 31-40 years had acquired tertiary education while 50% (11/22) of women who were at least 40 years had tertiary education. The proportion of women with tertiary education increased with increased maternal age. Therefore, the relationship between maternal age and level of education is statistically significant (P<0.001) (table 5.4).

Table 5.5 reveals the relationship between level of education and the number of children a woman had.

	Highest level of education						
Parity	No formal education	Primary	Secondary	Tertiary	Total	X ²	Sig.
1-2	16	33	220	178	447	98.40	<0.001
3-4	7	52	95	41	195		
5-6	7	23	9	20	49		
More than 6	1	2	4	2	9		
Total	31	110	328	241	710		

Table 5.5: Parity by level of education of women

The table shows that 3.6% (16/447) with one to two children, 3.6% (7/195) with three to four children, 14.3% (7/49) with five to six children and 11.1% (1/9) with more than six children had no formal education. Furthermore, 39.8% (178/447) women with one to two children 21% (41/195) with three to four children, 40.8% (20/49) with five to six children and 22.2% (2/9) with more than six children have had tertiary education. This reveals that the proportion of women with no formal education increases with increase parity while the proportion with tertiary education decreases with increase parity. The relationship between parity and level of education is statistically significant

Table 5.6 presents the highest level of educational attainment by respondents and their marital status at the time of data collection

Maternal level of education	Frequency (N= 751)	Percentages
No formal education	36	4.7
Primary	112	14.7
Secondary	351	46.0
Tertiary	252	33.0
Marital status	(N= 674)	
Single	73	10.8
Married	601	89.2

Table 5.6: Distribution of respondents according to level of education and marital status.

The findings indicate that 36/751 (4.7%) were not formally educated, 463/751 (60.7%) had received a primary or secondary education, while 252/751 (33.0%) had a tertiary education.

With regard to marital status, only 73/674 (10.8%) were single, while 601/674 (89.2%) were married.

Table 5.7 illustrates the occupation of women at the time of data collection and the estimated family monthly income in naira (N).

Occupation	Frequency (N=762)	Percentages
Housewife	303	39.7
Self employed	263	34.5
Civil servant	111	14.5
Student	82	10.7
Other	3	0.4
Family monthly earnings	(N= 626)	
N19,000 and below	329	52.6
N20,000- 40,000	173	27.6
N41,000- 80,000	86	13.7
N81,000- 120,000	26	4.2
N121, 000 and more	12	1.9

Table 5.7: Distribution of respondents according to occupation and family monthly earnings²

Table 5.3.1.3 above shows that 303/762 (39.7%) were housewives, 263/762 (34.5%) were self-employed, 111/762 (14.5%) were civil servants, 82/762 (10.7%) were students and 3/762 (0.4%) were working in private settings.

The mean monthly family income of these women was N29, 109(SD± 5395). (Nigerian naira), with 502/626 (80.2%) earning a maximum of N40,000 a month as family income; 86/626 (13.7%), earned between N41,000 and N80,000 and only 38/626 (6.1%) earned more than N80,000 monthly³.

²² Exchange rate of Nigerian Naira to US dollar as at 15th August 2014 is N 155.23 (Central Bank of Nigeria)

Table 5.8 presents the chi-squared analysis of the relationship between education and employment of respondents.

	Current occupation/ employment status						
Educational level	Housewives	Self employed	Civil servants	Students	Total	X ²	p value
No formal education	27	7	2	0	36	298.00	<0.001
Primary	61	46	1	4	112		
Secondary	162	158	18	10	348		
Tertiary	45	48	90	68	251		
Total	295	259	111	82	747		

Table 5.8: Occupation by educational level of women

The table indicates that 25% (9/36) of women who had no formal education, 42% (47/112) who had attended primary education, 50.6% (176/348) who had attended secondary and 55% (138/251) who had attended tertiary education were civil servants or self-employed. This suggest that the high the level of education, the greater the likelihood of employment. The test statistics suggest that the relationship is significant.

5.3.2 Modifying factors 2: Determinants of infant feeding

This section of modifying factors deals with two major categories of information. The first category contains data about factors that may influence breastfeeding while the second category comprises information about breastfeeding practices as a function of selected variables analysed using logistic regression.

5.3.2.1 Factors that may influence infant feeding practices

The participants were asked to provide information about their previous pregnancy, previous delivery, their occupation or employment during the previous pregnancy and delivery, and the occupation of their spouses. In the literature these factors have all been associated with infant feeding practices.

5.3.2.1.1 Previous pregnancy

Participants were asked how many children they had in their previous pregnancy (viz. whether they had twins or triplets etc.), and about the antenatal care they received.

Figure 5.12 below summarises the findings with regard to multiple pregnancies in the study group.

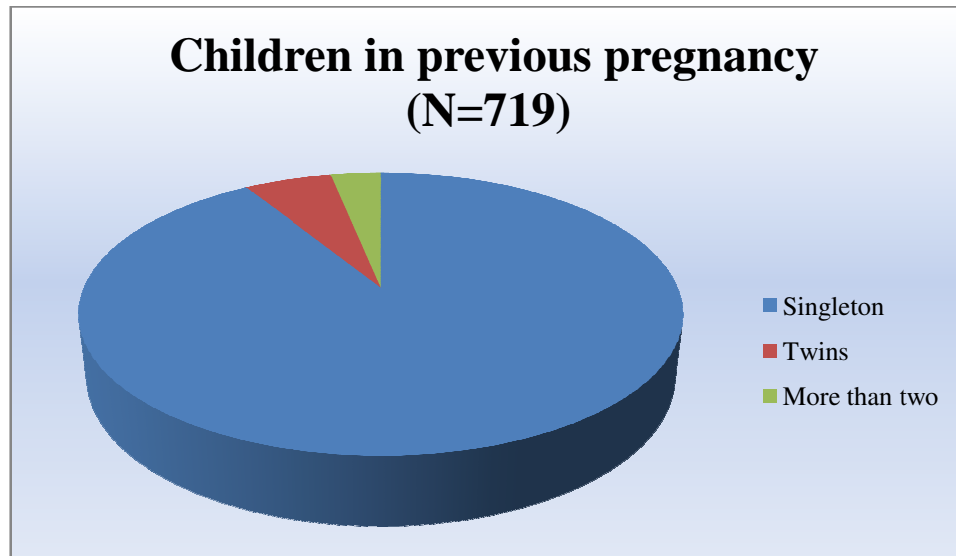


Figure 5.12: Number of children in the previous pregnancy.

The figure above reveals that the vast majority (656/719 or 91.2%) of participants had a singleton pregnancy on the previous occasion, while 63/719 (8.8%) had multiple pregnancies. The prevalence of multiple gestations suggests that, out of every 100 pregnancies, 9 are likely to be multiple.

Table 5.9 presents information about the respondents' attendance at antenatal clinics during their previous pregnancy.

Item	Frequency	Percentages
Antenatal attendance	(N=738)	
Yes	698	94.6
No	40	5.4

Table 5.9: Attendance at antenatal clinics.

The table above shows that almost all the participants (698/738 or 94.6%) attended antenatal clinics for the previous pregnancy, with only 40/738 (5.4%) reporting that they had not attended an antenatal clinic previously.

5.3.2.1.2 Information about previous birth

The participants' responses with regard to the place of delivery of their previous baby, as well as the type of birth, the pain relief receiving during labour, and the birth weight of the previous baby are all discussed in this section.

Table 5.10 presents information about the place of delivery of the previous baby and the type of delivery.

Item	Frequency	Percentages
Place of delivery	(N=742)	
Hospital	611	82.3
Home	131	17.7
Type of birth	N=731	
Normal	676	92.4
Forceps	15	2.1
Vacuum	3	0.4
Caesarean section	37	5.1

Table 5.10: Place of delivery and type of delivery.

Table 5.10 shows that most of the participants, i.e. 611/742 (82.3%), had delivered their previous babies in hospitals, while a small number, i.e. 131/742 (17.7%), had a home delivery. With regard to the type of delivery, almost all of them, namely, 676/731 (92.4%) reported that they had a normal delivery; 37/731 (5.1%) had a Caesarean section, 15/731 (2.1%) had a forceps delivery, while 3/731 (0.4%) had a vacuum delivery. This suggests that 8 out of a hundred births are likely to be assisted (forceps, vacuum or caesarean).

Table 5.11 summarises what the participants were feeding their babies when they were discharged, or within 48 hours after delivery. Some of the respondents who provided information about feeding at discharge or 48 hours after delivery did not indicate what their place of delivery had been, which therefore reduced the total number of responses to 707 for the cross tabulation.

	Place of delivery				
Feeding at discharge/ 48hours after delivery	Hospital	Home	Total	X ²	p value
Exclusive breastfeeding	512	84	596	209.11	< 0.001
Exclusive formula	11	11	22		
Mixed	33	12	45		
Expressed breast milk	16	4	20		
My baby was not feeding	13	1	14		
I don't remember	8	2	10		
Total	593	114	707		

Table 5.11: Infant feeding at discharge/48 hours after delivery by place of delivery.

A comparison of the findings presented in the above table suggests that women who delivered their babies in the hospital were more likely to breastfeed, as 86.3% (512/593) of women who delivered in hospital were breastfeeding at discharge. Among those who delivered at home, 73.7% (84/114) were breastfeeding exclusively by this time. Furthermore, 5.6% (33/593) of women who delivered in hospital were mixed feeding at discharge, while 10.5% (12/114) of those who delivered at home were mixed feeding at 48 hours after delivery.

The chi squared analysis suggested a statistically significant relationship between place of delivery and feeding at discharge/48 hours after birth (see Table 5.12 below. The type of delivery was classified into normal and abnormal, given the small number of responses indicating an 'abnormal' delivery, in the form of delivery by forceps, vacuum and caesarean.

	Type of delivery				
Feeding at discharge/ 48hours after delivery	Normal	Abnormal	Total	X ²	p value
Exclusive breastfeeding	525	46	571	55.74	<0.001
Exclusive formula	21	0	21		
Mixed	41	1	42		
Expressed breast milk	12	4	16		
My baby was not feeding	13	0	13		
I don't remember	10	0	10		
Total	623	51	673		

Table 5.12: Infant feeding at discharge/48 hours after delivery by type of delivery.

The table above shows that most of the women (525/623 or 84.3%) who had a normal delivery reported that they were exclusively breastfeeding at discharge/48 hours after birth, while 41/623 (6.6%) of these women reported mixed feeding. For women who had an abnormal

delivery (forceps, vacuum or caesarean deliveries), a high proportion (46/51 or 90.2%) reported exclusively breastfeeding at discharge, while 1/51 (2%) reported mixed feeding.

The relationship between feeding at discharge and type of delivery is statistically significant ($p < 0.001$).

Table 5.13 shows the various types of pain relief that had been used during the birth of the previous baby and the weight of the baby at birth.

Item	Frequency	Percentage
Pain relief during labour	(N=646)	
Epidural or spinal injection	33	5.1
Pethidine	6	0.9
Gas or air to breathe	12	1.9
General anaesthetic	27	4.2
Water	86	13.3
Nothing at all	482	74.6
Baby's weight at birth	(N=704)	
≤ 2kg	81	11.5
2.1- 4.0 kg	291	41.3
4.1 and above	120	17.0
I cannot remember	212	30.1

Table 5.13: Distribution of respondents according to use of pain relief during labour and baby's weight at birth.

The table above shows that almost three-quarters of the women (482/646 or 74.6%) were not given any pain relief during labour. Pethidine was used for 6/646 (0.9%) to relief pain during labour, 33/646 (5.1%) had epidural or spinal injections, 12/646 (1.9%) had gas or air to breathe, 27/646 (4.2%) had general anaesthesia and 86/646 (13.3%) had water to provide pain relief during labour. Table 5.7 also shows that 81/704(11.5%) reported that their children weighed less than 2 kg, 291/704 (41.3%) reported that their infants weighed 2.1 to 4 kg, 120/704 (17%) weighed more than 4.1 kg, while 212/704 (30.1%) could not remember their children's weight at birth.

Table 5.14 below shows summarises the association between use of pain relief and initiation of feeding. Those who reported the use of epidural or spinal injection, pethidine, gas, general anaesthesia and water were classified under those who used pain relief while those who reported that nothing was used were in the second category.

Use of pain relief	Time of initiation of feeding					X ²	p value
	1-30minutes	31 - 60minutes	61- 4hours	More than four hours after delivery	Total		
Did not use	147	188	61	52	448	18.00	0.006
Use	46	50	35	24	155		
Total	193	238	96	76	603		

Table 5.14: Initiation of feeding by use of pain relief

The table above shows that 147/448 (32.8%) of women who did not use pain relief initiated feeding within 30 minutes after birth while 335/448 (74.8%) who did not use pain relief initiated feeding within the first one hour. 46/155 (29.7%) who used pain relief initiated feeding with 30 minutes while 96/155 (61.9%) who used pain relief initiated feeding with the first hour after birth. The relationship between feeding initiation and used of pain relief during labour is statistically significant (P=0.006).

5.3.2.1.3 Information about occupation during previous birth and occupation of spouses

In this section the occupation of women just before the delivery of their previous baby, and the occupation of their spouses is presented

Figure 5.13 sets out the occupation of the participants' spouses.

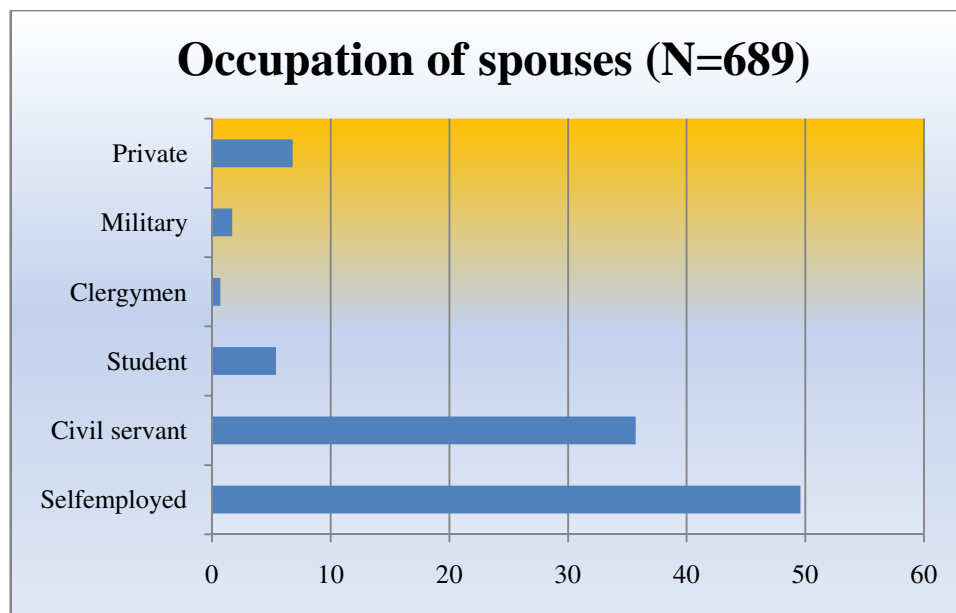


Figure 5.13: Occupations of spouses.

According to the figure above, almost half (342/689 or 49.6%) of the spouses were self-employed, just over a third (246/689 or 35.7%) were employed as civil servants, 37/689 (5.4%) were students, 5/689 (0.7%) were clergymen, 12/689 (1.7%) were military personnel, while 47/689 (6.8%) were working in the private sector.

Table 5.15 summarises the employment status of women at the time that their previous baby was born, and the number of hours they were working in a day.

Item	Frequency	Percentage
Employment status during previous delivery.	(N=660)	
Working	362	54.8
Not working	298	45.2
Hours of work per day	(N=468)	
1-5	194	41.5
6-10	179	38.2
More than 10	95	20.3

Table 5.15: Distribution of respondents according to information related to work during previous birth.

The table above shows that over half of the respondents (362/660 or 54.8%) were employed when they had their previous baby, 298/660 (45.2%) were not working. Those who were employed worked for an average of 6.9(SD±2.6) hours a day. Less than half (194/468 or 41.5%) of the respondents were working for 1 to five hours a day, 179/468 (38.2%) were working for 6-10 hours a day and 95/468 (20.3%) were working for more than 10 hours a day during their previous pregnancy.

Table 5.16 presents information regarding employment status just before the birth of the previous child, and the arrangements made for the care of the baby while the mother was at work.

Item	Frequency	Percentage
Employment status just before birth	(N=451)	
Working for payment or profit	247	54.8
Looking for first job	41	9.1
Unemployed	70	15.6
Student or pupil	24	5.3
Looking after home/family	61	13.5
Unable to work due to permanent sickness/disability	2	0.4
Other	6	1.3
Arrangements made for care of baby when at work	(N=466)	
A relative assisted in looking after the baby	200	42.9
I employed someone to care for the baby	67	14.4
I went to work with my baby	189	40.6
Others	10	2.1

Table 5.16: Employment status and arrangements made for baby care.

The table shows that more than half of the women (247/451 or 54.8%) were working for payment or profit before their baby was born; 41/451 (9.1%) were looking for job, 70/451 (15.6%) were unemployed, 24/451(5.3%) were students, 61/451(13.5) were looking after the home, while 2/451 (0.4%) could not work due to permanent sickness/ disability. Less than half of the women (viz. 200/466 or 42.9%) had relations looking after their babies, 67/466 (14.2%) employed someone to care for their baby, 189/466 (40.6%) took their baby to work with them, 10/466 (2.1%) had friends or neighbours who looked after their babies, or they took the baby to day care, while some had lost their babies before this time.

Figure 5.14 presents information about the nature of employment of women

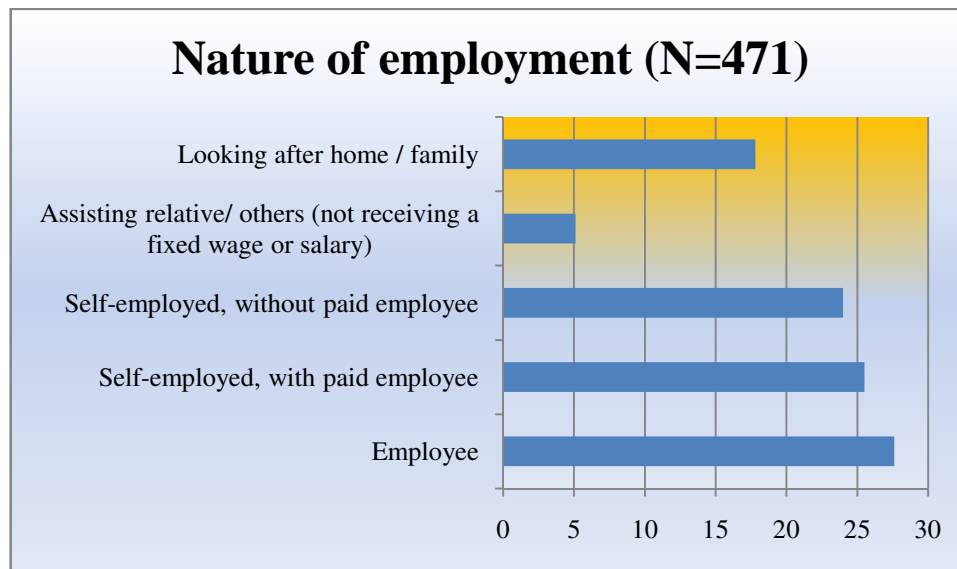


Figure 5.14: Nature of employment

The figure shows that 130/471 (27.6%) are employees, 120/471 (25.5%) were self-employed and had one or more paid employees, 113/471 (24%) were self-employed without any paid employee, 24/471 (5.1%) were assisting relatives or others without receiving a wage or a salary, while 84/471 (17.8%) were looking after the home and the family.

Figure 5.15 shows how long after delivery mothers returned to work.

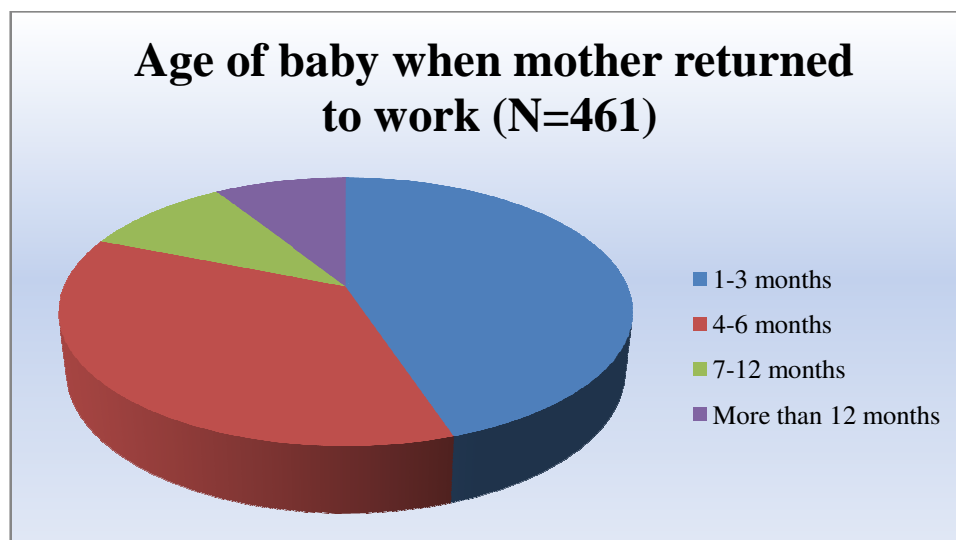


Figure 5.15: Age of baby when mother returns to work.

The mean age of the baby when the mothers returned to work was 4.9 (SD±2.2) months. According to Figure 5.3.2.1.3.4above, 207/461(44.9%) returned to work when their babies were between one and three months old, 167/461 (36.2%) waited until their babies were four four to six months old, 46 (10%) returned to work when their babies were seven to 12 months old, and a smaller number of 41/461 (8.9%) returned only after 12 months.

Figure 5.16 looks at the availability of breastfeeding facilities at the respondents' places of work.

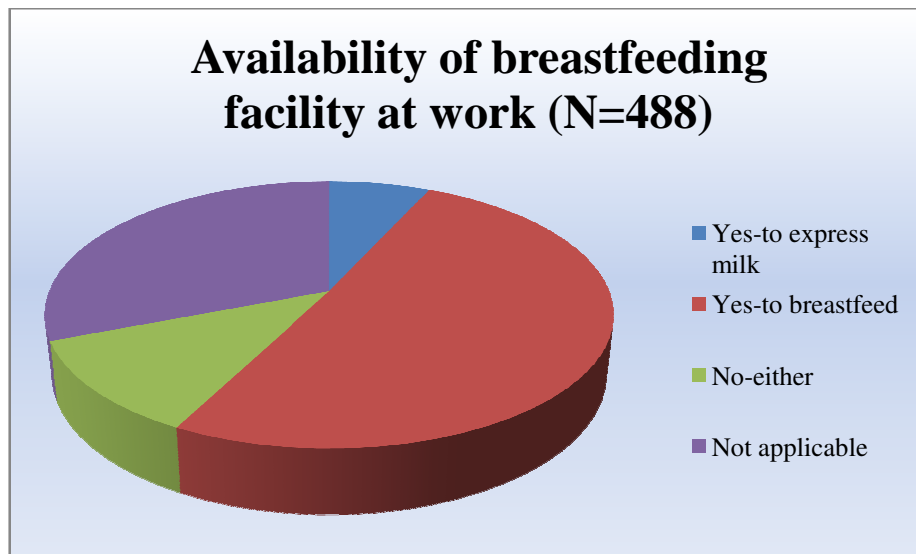


Figure 5.16: Availability of breastfeeding facilities at work

The figure above shows that more than half of the respondents, i.e. 281/488 (57.6%), were able to breastfeed or express breast milk at work in facilities that were provided by their employers, while a smaller number, namely, 56/488 (11.5%) reported that their employers had not provided such a facility.

It was expected that, after delivery, women would stay at home to recover and care for their babies.

5.3.2.2 Breastfeeding practices as a function of selected independent variables

This section shows the odds ratio and p values of the logistical regression analysis of breastfeeding practices (early initiation of feeding, frequency of feeding, exclusive breastfeeding, duration of total breastfeeding and breastfeeding intention) as a function of selected independent variables. The selected variables are maternal age, occupation, marital status, economic status, parity, educational background, place of delivery, type of delivery, use of pain relief during labour, number of children in previous pregnancy, prenatal feeding

intention, attendance at antenatal clinic, skin-to-skin contact after birth, knowledge about breastfeeding benefits, knowledge of how family and friends breastfed their babies, knowledge of how respondents themselves were fed as newborn babies, seeing an advert about breastfeeding, and availability of a breastfeeding facility at the workplace. These variables were selected because of the reasonable number of responses received and based on the information obtained from previous literature related to infant feeding. Bring in refecen to tgable 5.17 here and, then the tableTable 5.17 shows the logistical regression analysis of breastfeeding practice as a function of fourteen (14) independent variables.

	Odds Ratio (OR) and p values for various dependent variables. [odds ratio(p value)]				
Independent Variables	Early initiation	Frequency of feeding	Exclusive breastfeeding	Duration of breastfeeding	Breastfeeding intention.
Young maternal age	2.29(<0.001)	1.03(0.904)	1.12 (0.511)	2.4 (<0.001)	1.37 (0.113)
Low Parity	0.85(0.352)	1.19(0.729)	2.3 (0.001)	1.38 (0.502)	1.08 (0.92)
Occupation	1.42 (0.031)	0.75 (0.15)	0.87 (<0.001)	1.4 (0.087)	0.89 (0.515)
Marital status	0.56(0.077)	0.62(0.322)	1.14 (0.617)	3.86 (<0.001)	3.1(0.011)
Economic status	0.64(0.013)	0.86(0.516)	1.71(0.001)	1.14(0.551)	1.03(0.87)
Educational background	1.39(0.31)	1.1(0.865)	1.24(0.57)	0.13(0.41)	0.53(0.056)
Place of delivery	1.53(0.624)	0.37(<0.001)	0.69(0.169)	1.16(0.583)	1.18(0.482)
Type of delivery	0.359(1.36)	0.884(0.87)	0.65(0.232)	2.64(0.092)	0.86(0.842)
Number of children in last pregnancy	0.68(0.173)	1.42(0.382)	0.97(0.907)	1.4(0.391)	0.88(0.837)
Previous prenatal feeding intention	0.72(0.242)	1.88(0.085)	0.3(<0.001)	2.24(0.129)	1.73(0.091)
Attendance at antenatal	0.72(0.387)	1.28(0.85)	0.68(0.373)	1.55(0.498)	3.01(<0.001)
Knowledge of how family and friends breastfed their babies	1.7(0.006)	0.78(0.148)	0.57(0.117)	0.38(<0.001)	1.23(0.311)

Table 5.17 continue

	Odds Ratio (OR) and p values for various dependent variables. [odd ratio(p value)]				
Independent Variables	Early initiation	Frequency of feeding	Independent Variables	Early initiation	Frequency of feeding
Knowledge of how respondents were fed as new born	1.55(0.032)	0.69(0.165)	1.07(0.693)	1.54(0.186)	1.58(0.025)
Ever seen an advert on breastfeeding	0.66(0.027)	0.72(0.205)	0.76(0.154)	3.58(<0.001)	1.17(0.475)
Skin-to-skin contact after birth	1.07(0.738)	0.62(0.06)	1.24(0.24)	1.75 (0.019)	0.23(0.59)

Table 5.17: Results of regression analysis of breastfeeding practices as a function of selected variables.

The analysis suggests that eleven independent variables were significant predictors of breastfeeding practice at a 95% confidence interval. The outcome also reveals that educational background, type of delivery, and number of children in previous pregnancy were not predictors of breastfeeding practice in this setting. The results in bold indicate a significant relationship.

The maternal age independently predicted early initiation of breastfeeding and duration of total breastfeeding. In other words, women below the age of 30 years are about 2.3 times more likely to initiate breastfeeding early, and 2.4 times more likely to breastfeed for a shorter period of time, compared with women who are 30 years of age or older ($p < 0.05$). This implies that younger maternal age is positively associated with early initiation of feeding but negatively associated with long duration of breastfeeding.

Parity predicted exclusive breastfeeding. The analysis indicates that women who have fewer than five children are 2.3 times more likely to give other feeds within the first six months of their baby's life than those who have 5 or more children ($p = 0.001$). This means that having fewer children is negatively associated with exclusive breastfeeding.

Women who are housewives or students are 42% more likely to initiate feeding earlier and 13% less likely to give other feeds within the first six months of life, when compared with those who are employed or running a business ($p < 0.05$). This finding suggests that

employment has a negative association with early initiation of infant feeding and exclusive breastfeeding.

The analysis furthermore indicates that single women are 3.86 times more likely to breastfeed for a shorter duration and that they are three times more likely to intend to breastfeed than married women ($P < 0.05$), which suggests that being single has a negative association with duration of breastfeeding but is positively associated with breastfeeding intention.

Economic status was an independent predictor of breastfeeding practice. Women from families that are earning less than N20,000 a month are 36% less likely to initiate feeding within 30 minutes of delivery, and 71% more likely to introduce other feeds within the first six months of life than women who are from families that earn N20,000 or more a month ($P < 0.05$). This indicates that delays in initiation of feeding and shorter duration of exclusive breastfeeding are both associated with low economic status in this setting.

Place of delivery also predicted breastfeeding practice because women who delivered at the hospital are 63% less likely to feed on demand than those who delivered at home ($p = 0.0004$).

Breastfeeding intention during pregnancy also predicted breastfeeding practice because women who intended to breastfeed are 70% less likely to introduce other feeds within the first six months of life than women who never had a feeding plan ($p < 0.001$).

Women who attended antenatal clinic during their previous pregnancy are 3 times more likely to intend breastfeeding their infants than women who did not attend such a clinic ($p < 0.001$). This indicates that antenatal care is a positive predictor of breastfeeding intention.

Women who know that their family and friends breastfeed their children are 70% more likely to initiate feeding earlier and 62% less likely to breastfeed totally for a shorter duration than women who do not know about their families' or friends' breastfeeding practices ($p < 0.001$). Early initiation of breastfeeding and long duration of total breastfeeding are associated positively with knowledge that their family members breastfeed their babies.

Women who know how they were fed as babies are 55% more likely to initiate feeding earlier, and 58% more likely to anticipate breastfeeding than those who do not know ($p < 0.05$). This suggest that women who know how they were fed as babies are more likely to initiate breastfeeding within 30 minutes after birth and are also likely to choose to breastfeed their children.

Table 17 also shows that women who have at some time seen an advertisement about breastfeeding are 34% less likely to initiate feeding within 30 minutes after birth and 3.6 times more likely to breastfeed for a maximum of one year, than those who have never seen such advertisements ($p < 0.05$). This means that seeing an advert is not a positive predictor of early initiation of feeding and duration of total breastfeeding.

Women who have had skin-to-skin contact with their baby after birth are 1.75 more likely to breastfeed, and to do so for shorter duration, than those who have not had such intimate contact.

5.4 Cues to action and self-efficacy

Personal, interpersonal and environmental factors that may influence infant feeding behaviour, feeding outside the home, and support given to women after birth are among the issues discussed in this section.

5.4.1 Personal, interpersonal and environmental factors that may influence infant feeding

This section presents the data with regard to knowledge of how family and friends fed their babies, how respondents were fed as babies, the benefits of breastfeeding and formula feeding, if respondents have ever seen an advert promoting breast or formula feeding, and various interpersonal factors.

Figure 5.17 presents the data with regard to the respondents' knowledge of how their families and friends fed their babies.

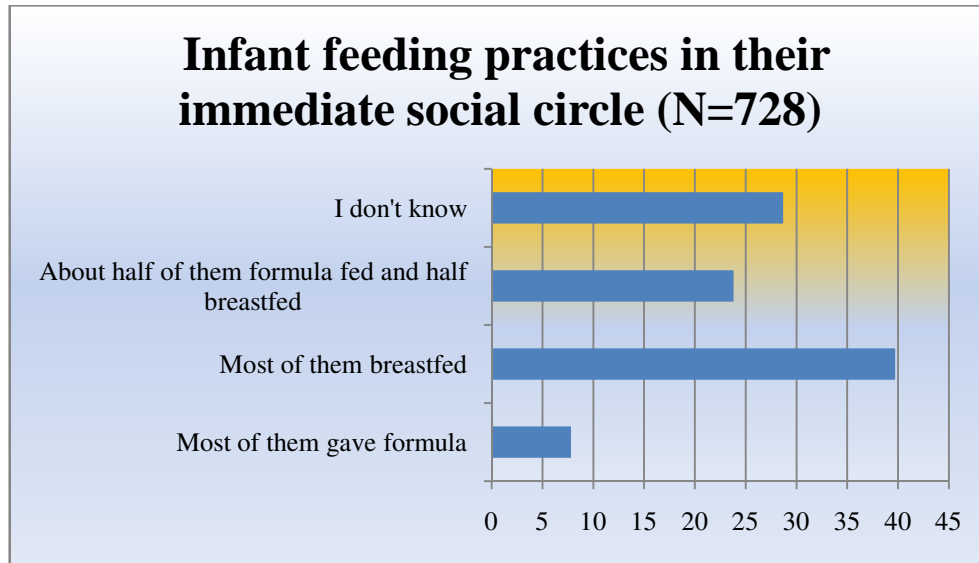


Figure 5.17: Infant feeding practices in the respondents' immediate social circle.

The figure shows that 57/728(7.8%) of the respondents reported that most of their friends and family formula fed their babies; 289/728 (39.7%) said most of them breastfed, 173/728 (23.8%) reported that half breastfed and half formula fed their babies, and 209/728 (28.7%) reported that they did not know how their friends and family fed their babies.

Table 5.18 summarises how respondents were fed as babies.

Item	Frequency	percentage
Feeding as an infant	(N=715)	
Breastfed	350	49.0
Infant formula	32	4.5
Breast and infant formula	137	19.2
I don't know	196	27.4

Table 5.18: Feeding of respondents as babies.

The table shows that just less than half of the respondents, viz. 350/715 (49%), were breastfed as new born babies, 32/715 (4.5%) were formula fed, and while 137/715 (19.2%) were mixed fed.

Figure 5.18 below indicates if participants had seen advertisements recommending either breastfeeding or formula feeding.

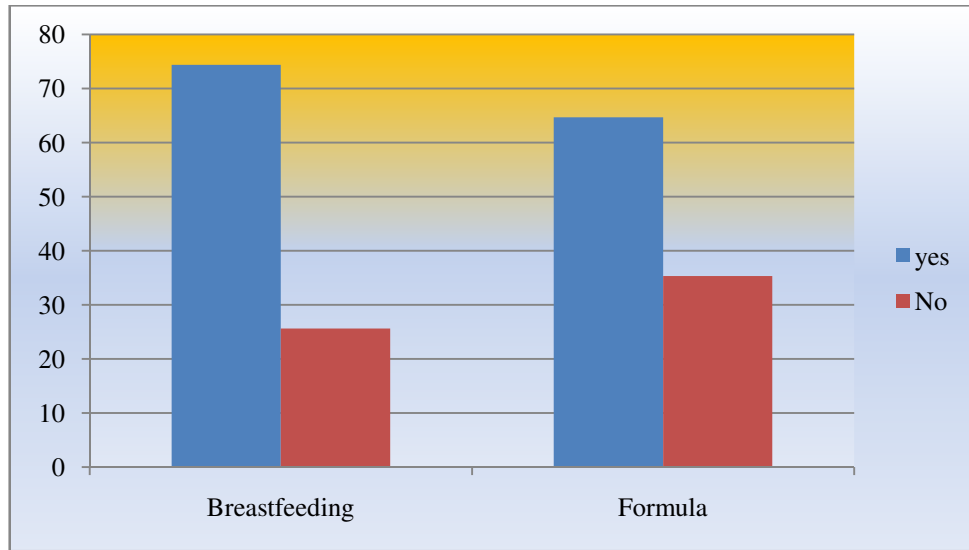


Figure 5.18:Advertisements with regard to breastfeeding and formula feeding.

The figure above shows that 511/687 (74.4%) of the respondents had seen an advert for breastfeeding and 438/677 (64.7%) had seen an advert for infant formula. It also shows that 176/687 (25.6%) and 239/677 (35.3%) had never seen an advert on breastfeeding and formula feeding respectively.

Table 5.19 below summarises the personal and interpersonal factors that may affect infant feeding and includes personal experience, influence of friends and family, influence of mothers and mother in-laws and other relations, and influence of peer groups, voluntary organizations, books, magazines and health professionals.

	Questions / frequency (%)			
Responses	Who or what helped you most to continue breastfeeding?	Who or what helped you least to continue breastfeeding?	Who or what influenced you to stop breastfeeding?	Who or what had the most impact on you?
Own experience	300 (44.6%)	296 (46.3%)	392 (67.2%)	241(37.7%)
Health professional	265(39.5%)	212 (33.2%)	73 (12.5%)	235(36.8%)
Mother-in-law	45 (6.7%)	68 (10.6%)	35 (6.0%)	27 (4.2%)
Friends/other mothers	44 (6.6%)	28 (4.4%)	57(9.8%)	61 (9.6%)
Other relatives	13 (1.9%)	20 (3.1%)	11 (1.95)	36 (5.7%)
Peer or support groups	1(0.1%)	2 (0.3%)	6 (1.05)	
Voluntary organizations	3 (0.5%)	7 (0.9%)	6 (1.0%)	
Books/ magazines/TV	1 (0.1%)	5 (1.1)		2 (0.3%)
Others		1 (0.1%)	3 (0.6%)	
Total	672	639	583	639

Table 5.19: Interpersonal factors that influence breastfeeding.

Table 5.19 shows the responses of women regarding who or what helped them to continue breastfeeding. Almost half of the respondents – 300/672(44.6%) – reported that it was their own experience that helped them to continue breastfeeding; 265/672 (39.5%) cited health personnel (nurses or doctors), 44/672 (6.6%) said it was their friends and mothers, 45/672 (6.7%) said it was their mother-in-law, 13/672 (1.9%) mentioned other relatives, 1/672 (0.1%) referred to peer or support groups, 3/672 (0.5%) said voluntary organization and 1/672 (0.1%) said that it was information they had obtained from books and magazines that helped them to continue breastfeeding. With regard to the people or reasons that were least helpful to the respondents, 296 (46.3%) said it was their own experience, 212/639 (33.3%) referred to health personnel, 68/639 (10.6%) mentioned their mother-in-law, 28/639 (4.4%) said it was their friends and family, 20/639 (3.1%) mentioned other relatives, 15/639 (2.3%) cited peer or support groups, voluntary organizations, or books and magazines.

Conversely, 392/583 (67.2%) women were influenced to stop breastfeeding by their own experience, 57/583 (9.8) said it was because of friends and family, 35/583 (6%) mentioned

their mother-in-law, 11/583 (1.9%) said it was other relatives, 73/583 (12.5%) referred to health personnel, and 12/583 (2.6%) said it was due to advice from peer and support groups, voluntary organizations and the mass media.

When asked about what impacted them most, 241/639(37.7%) reported that they were mostly impacted by their own experience, 61/639 (9.6%) by their friends and family, 36/639 (5.6%) by their mothers, 27/639 (4.2%) by mother in-laws, 36/639 (5.7%) by other relatives, 235/639 (36.8%) by health professionals and 2/639 (0.3%) by books and magazines.

5.4.2 Feeding outside the home

The participants were asked how they felt breastfeeding their infants in a public place and the challenges encountered with feeding outside the home.

Figure 5.19 below presents information about feeding of previous infant outside the home.

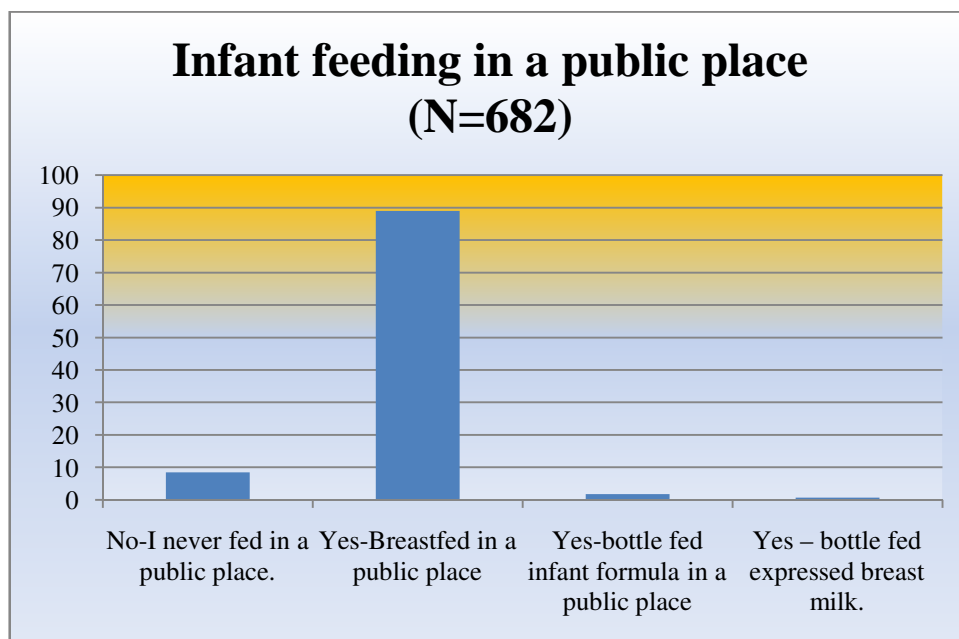


Figure 5.19: Infant feeding in a public place.

The figure shows that only a small percentage of women, i.e. 58/682 (8.5%), had never breastfed in a public place; the vast majority, i.e. 607/682 (89%), had breastfed in a public place before. An even smaller number – 12/682 (1.8%) – reported bottle feeding infant formula in public, while 5/682 (0.7%) reported feeding expressed breast milk in a public place.

Participants were asked how confident they felt about breastfeeding, and whether they had had problems finding somewhere to breastfeed in a public place; they were also asked whether they

had ever being stopped breastfeeding in a public place, if they felt uncomfortable doing so, and the extent to which they were able to breastfeed their babies in public.

Table 5.20 summarises the results about problems with feeding outside the home.

Item	Frequency	Percentage
Problems finding somewhere to breastfeeding a public place	(N=670)	
Yes	126	18.8
No	544	81.2
Challenges or feeling uncomfortable feeding in public	(N=683)	
Yes	168	24.6
No	515	75.4

Table 5.20: Information related to challenges with breastfeeding in a public place.

The table above shows that a significant majority, namely, 544/670 (81.2%) of the participants, had never had problems finding somewhere to breastfeed in a public place, and that a similar majority 515/683 (75.4%) had also never been stopped feeding in a public place, or been made to feel uncomfortable about doing so.

Table 5.21 shows the relationship between societal opposition of public feeding and frequency of feeding. Response to the item that asked whether respondents have ever been stopped or made to feel uncomfortable feeding in a public place was cross tabulated with frequency of feeding. The findings are summarised below.

	Feeding frequency						
Ever been stopped	1-3	4-7	On demand	Cannot remember	Total	X²	P value
Yes	17	21	66	57	161	53.27	$\rho < 0.001$
No	26	58	304	102	490		
Total	43	79	370	159	651		

Table 5.21: Challenge with feeding in a public place by frequency of feeding.

The table above shows that 66/161 (41%) of women who had ever been stopped or made to feel uncomfortable with feeding in a public place, fed on demand while 304/490 (62%) of women who were never stopped or made to feel uncomfortable with feeding in a public place fed on demand. The relationship between challenge with public feeding and feeding frequency is statistically significant ($\rho < 0.001$).

5.4.3 Support for women

The participants were asked about the support they received from health workers and relatives during the early days after delivery, and after they had been discharged from the hospital.. Specifically, they were asked whether they had skin-to-skin contact with their babies after delivery, and who showed them what to do and how to do it.

Table 5.22 summarises this information.

Item	Frequency	percentage
Skin-to-skin contact after delivery	(N=674)	
Yes	351	52.1
No	257	38.1
Cannot remember	66	9.8
If yes, who assisted?	(N=499)	
I was not shown	198	39.7
Nurse	227	45.5
Nursing/medical student	15	3.0
Friends/relatives	32	6.4
Doctor	20	4.0
Ward attendants	7	1.4

Table 5.22: Skin-to-skin contact after delivery and assistance received.

According to the table above, over half of the women, namely, 351/674 (52.1%), had skin-to-skin contact with their newborn children, though more than a third, 257/674 (38.1%), reported that they did not having such intimate contact with their babies immediately after delivery.

Assistance with regard to skin-to-skin contact and the initiation of breastfeeding was received from various sources: slightly less than half of the women, 227/499 (45.5%), were assisted by nurses to ensure that they initiated breastfeeding correctly. To a lesser degree, they were assisted by friends or relatives (32/499 or 6.4%), doctors (20/499 or 4.0%), nursing/medical students (15/499 or 3.0%), and ward attendants (7/499 or 1.4%). However, a large number of women – 198/499 (39.7%) – were not shown how to have immediate skin-to-skin contact after birth, or told how important this was.

Figure 5.20 below illustrates the assistance women received from family, friends, health workers and significant others to initiate or establish feeding, after the delivery of their previous baby.

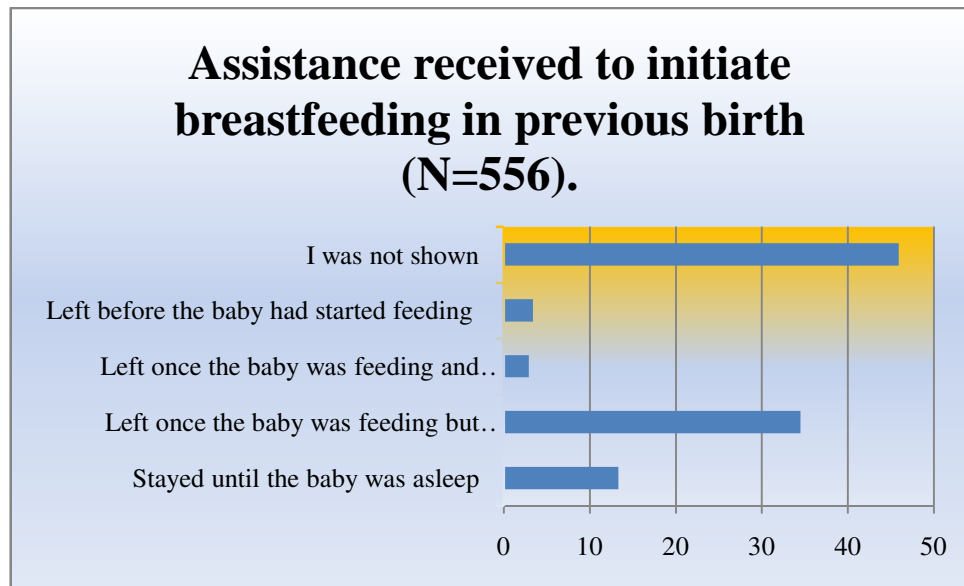


Figure 5.20: Assistance received to initiate breastfeeding in previous birth.

According to the above figure, 74/556 (13.3%) reported that the person who assisted them stayed until the baby was asleep, 192/556 (34.5%) said the person left once the baby was feeding but came back to check on them, 16/556 (2.9%) said the person left once the baby was feeding and did not come back to check on them, and 19/556 (3.4%) left before the baby had started feeding, while 255/556 (45.9%) were not shown what to do.

The women were also asked how useful the help offered was, in showing them how to feed their previous baby and to ensure skin-to-skin contact after delivery. Figure 5.21 below summarises the results.

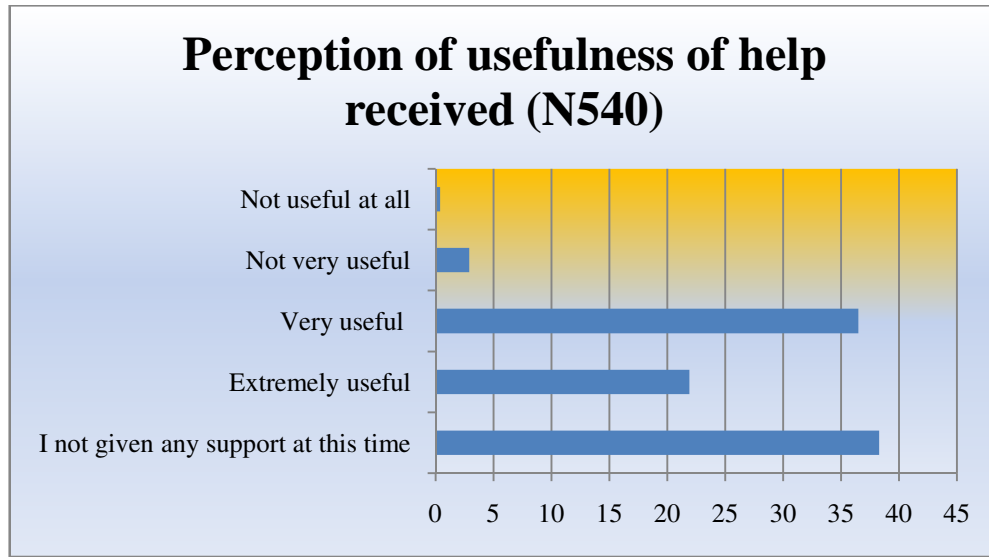


Figure 5.21 Perception of usefulness of help received.

According to the above figure, 207/540 (38.3%) were not given any help. The support received at this time was extremely useful for 118/540 (21.9%) of the participants, very useful for 197/540 (36.5%), not very useful for 16/540 (2.9%), and 2/540 (0.4%) reported that the help was not useful at all.

Figure 5.22 below presents information relating to the support that women received, when they experienced problems in the early days after having delivered their previous child.

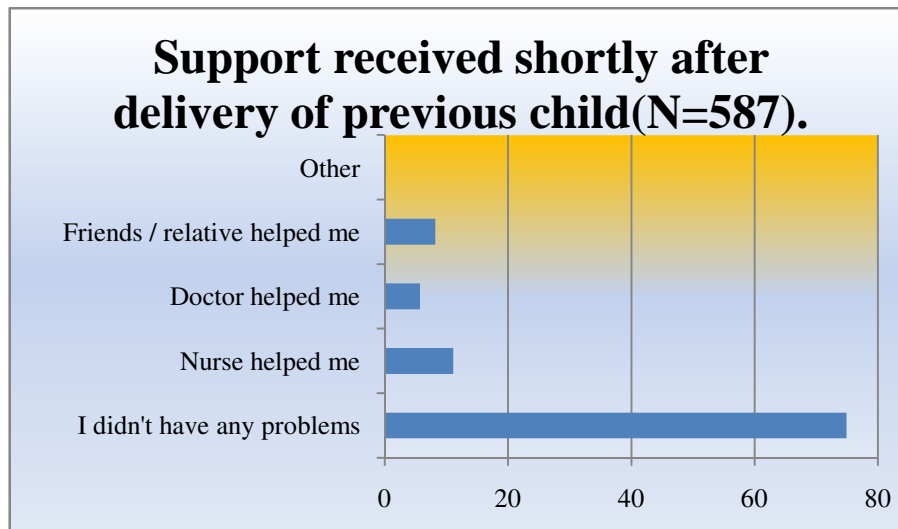


Figure 5.22 Support received shortly after delivery of previous child.

The figure summarises the participants' responses, when they were asked about the support they had received in the early days after delivering their previous child: 447/587 (74.9%)

reported that they had no problems in the early days and did not need any support for breastfeeding; 66/587 (11.1%) said they got support from nurses, and 34/587 (5.7%) got help from doctors. Family and friends assisted 49/587 (8.2%) and 1/587 (0.2%) from family, friends and health personnel.

Respondents were asked to indicate if they received support in the form of home visits and access to breastfeeding support services.

Item	Frequency	Percentage
Home visit after discharge	(N=561)	
Nurse	43	7.7
Doctor	16	2.9
No visit in the first two weeks	501	89.2
Other	1	0.2
Information about support services	N=550	
I was not given any information about support services	454	82.6
Community breastfeeding support group	86	15.6
Others	10	1.8

Table 5.23: Information about home visit and support services.

According to the table, the vast majority of the participants – 501/561 (89.2%) – were not visited at home after they had been discharged; 43/561(7.7%) said they were visited by nurses, 16/561(2.9%) by doctors, and 1/561 (0.2%) by other health personnel. The table also shows that a significant majority – 454/550 (82.6%) – were not given information about support services, 86/550 (15.6%), got information about the existence of community breastfeeding support groups, and 10/550 (1.8%) were given information about private/NGOs who would help with breastfeeding.

Figure 5.23 below presents information about the ease with which respondents were able to access breastfeeding support services.

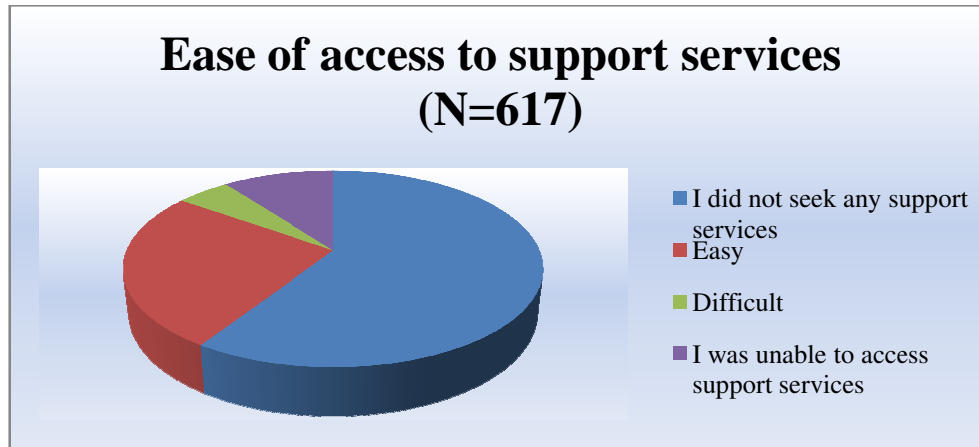


Figure 5.23 Ease of access to support services.

According to the figure, 365/617 (59.1%) did not seek any support services, 159/617 (25.8%) easily found breastfeeding support services, 30/617 (4.9%) reported encountering difficulty in accessing support services, while 63/617 (10.2%) were unable to access support services at all.

5.5 feeding intentions for the expected baby

Participants were asked about their infant feeding intentions with regard to their previous baby as well as for the baby they were now carrying, and specifically asked to indicate the intended duration of exclusive breastfeeding and the intended duration of breastfeeding, as well as to give their reasons for this.

Table 5.24 summarises their responses.

Characteristics	Frequency	Percentage
Feeding intention for previous child	(N=739)	
Breast milk	543	73.5
Infant formula	15	2.0
Mixed feeding	120	6.2
I didn't have any plans	61	8.3
Reasons for the intentions	N=674	
Best for my baby's health	468	69.4
Convenience	75	11.1
I was advised	82	12.2
I may not cope with breastfeeding	47	7.0
Other	2	0.3

Table 5.24: Feeding intentions with regard to previous child/children and reasons for intention.

According to the table, during the prenatal period for the previous baby, almost three-quarters of the women – 543/739 (73.5%) – had planned to breastfeed their babies, while 15/739 (2.0%) had planned to use infant formula, 120/739 (16.2%) had intended to practice mixed feeding, and 61/739 (8.3%) had made no plans with regard to how they would be feeding their babies. For those who had made plans, various reasons were advanced. For instance, 468/ 674 (69.4%) reported that breastfeeding was the best for their babies, 75/674 (11.1%) stated that it was the most convenient, 82/674 (12.2%) said they were advised to breastfeed their babies, and 2/674 (0.3%) said they felt like feeding their children that way. However, a small number of 47/674 (7%) said they were afraid they might not cope with breastfeeding.

Table 5.25 presents similar information, this time with regard to their intentions of what they would feed the baby they were currently expecting, and their reasons for those particular intentions.

Items	Frequency	Percentage
Infant feeding intention	(N=749)	
Breast milk	596	79.6
Infant formula	22	2.9
Combination of both breast milk and formula	131	17.5
Reasons for intention	N=717	
It is the best for my baby's health	564	78.7
For convenience	68	9.5
I was advised in hospital to feed this way	43	6.0
I may not be able to cope with breastfeeding	36	5.0
Other	6	0.8

Table 5.25:Feeding intentions with regard to current child/children and reasons for intention.

According to above table, over three-quarters of the women, 596/749 (79.6%), wanted to breastfeed their current baby, whereas a small number of 22/749 (2.9%) said they were anticipating to give them only infant formula and 131/749 (17.5%) anticipated that they would give them both infant formula and breast milk. When they were asked to explain their reasons for these intentions, the majority –564/717 (78.7%) – felt that breastfeeding was the best for their baby, 68/717(9.5%) said that it was the most convenient, and 43/717 (6%) said they were advised to do so in hospitals. However, 36/717 (4.8%) said they were afraid they might not cope with breastfeeding and 6/717 (0.8%) said they had health condition or had to return to work or school and therefore might not be able to breastfeed exclusively.

The participants were asked for how long they intended exclusively breastfeeding their babies and their reasons for the various lengths of time.

Item	Frequency	Percentages
Intended duration of exclusive breastfeeding	(N=731)	
≤ 2 months	32	4.4
3-4 months	118	16.1
5-6 months	271	37.1
More than 6 months	310	42.4
Reasons for duration	N=691	
It is the best for my baby's health	511	74
Convenience	64	9.3
I was advised in hospital to feed this way	79	11.4
I cannot cope with breastfeeding	32	4.6
Other	5	0.7

Table 5.26: Intended duration of exclusive breastfeeding, and reasons for the duration.

According to the table, the estimated mean duration of anticipated exclusive breastfeeding was 5.9(SD±2) months. A small number of women, 32/731 (4.4%), reported that they intended to breastfeed exclusively for a maximum of two months only, 118/731(16.1%) said they would breastfeed exclusively for three to four months, and the majority of 581/731 (79.5%) intended to breastfeed for at least 5 months. When asked why, 511/691(74%) reported that breastfeeding was the best for their baby's health, 79/691(11.4%) said that it was the most convenient, and 64/691(9.3%) had been advised in hospital that breastfeeding was best. A small number of women, 32/691 (4.6%), reported that they were anxious they might not cope with breastfeeding. Figure 5.24 below presents information about intended duration of breastfeeding for the expected baby.

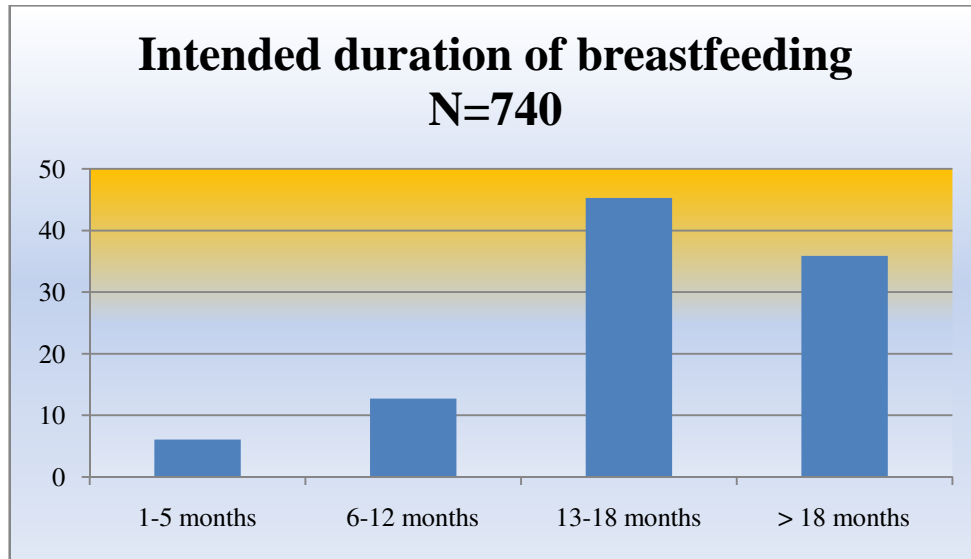


Figure 5.24: Intended duration of breastfeeding.

The mean anticipated duration of breastfeeding was 16.1(SD \pm 4) months. Figure 5.24 shows that 45/740 (6.1%) intended to breastfeed for a duration of 1-5 months and 94/740 (12.7%) for 6-12 months, while a reasonable number of 335/740 (45.3%) wanted to breastfeed for 13-18 months and 266/740 (35.9%) intended to breastfeed for more than 18 months.

5.6 Personal perception of infant feeding

There are four elements of personal perception in the Health Belief Model (2009). They are perceived susceptibility, perceived severity/seriousness, perceived benefits and perceived barriers (see Figure 2.2). Information related to the first two elements (perceived susceptibility and perceived severity/seriousness) are contained in various sections of other constructs already presented. Reference will be made to them during the discussion of the findings.

5.6.1 Problems encountered during breastfeeding

Information presented in this section related to breastfeeding problems or challenges, such as problems experienced in the early days after delivery, the nature of the problems, and the types of the problem as a result of breastfeeding.

Participants were asked if they encountered any problems with breastfeeding in the early days after delivering their previous child.

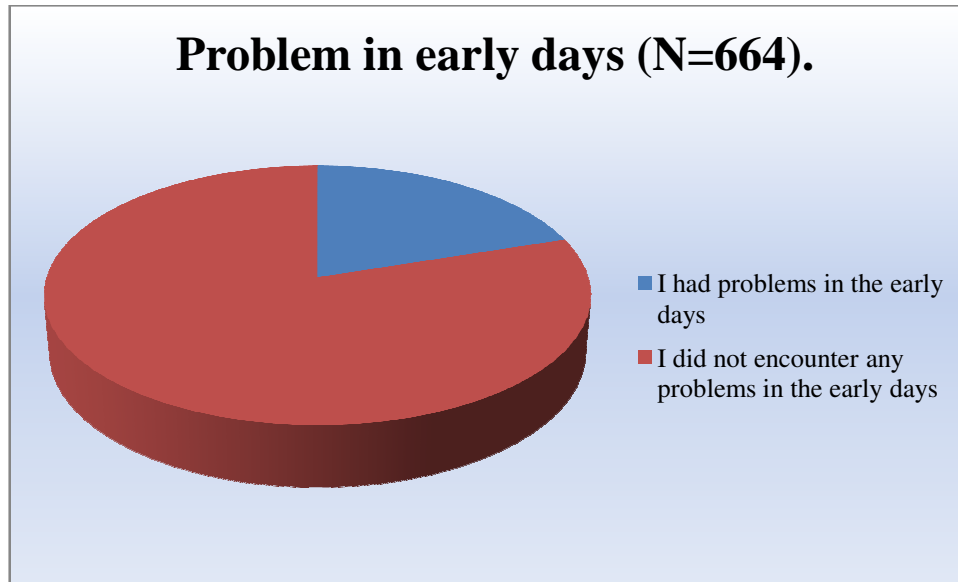


Figure 5.25: Response about problems in early days

According to the above figure, in the early days of breastfeeding, 133/664 (20%) said they encountered some challenges with breastfeeding, whereas the majority (531/664 (80%)) reported that they had no problems.

Participants were then asked to specify the nature of any problems they experienced with breastfeeding in the early days.

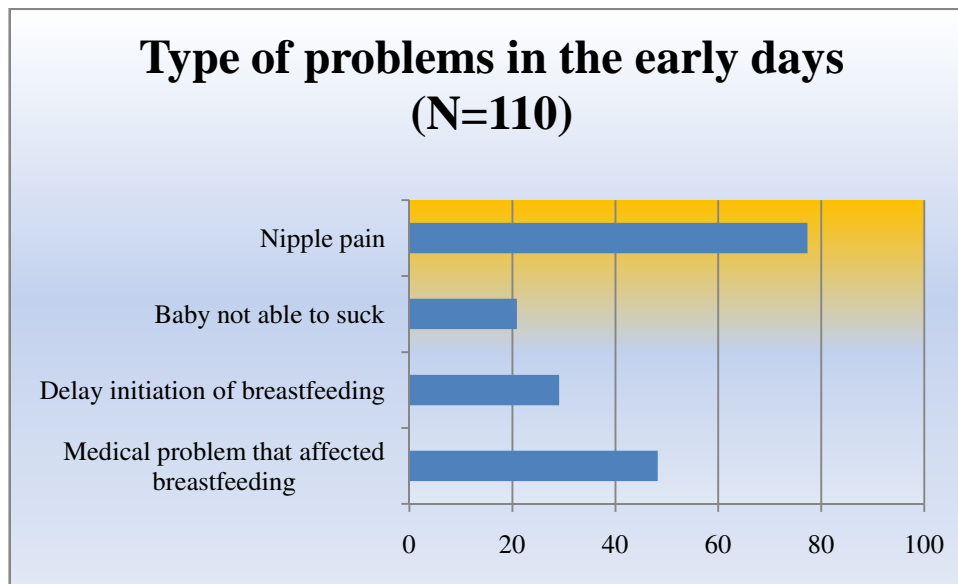


Figure 5.26: Types of problems with breastfeeding in the early days.

Almost half of the women, 53/110 (48.2%), said that they encountered medical problems in the early days, which made it difficult for them to breastfeed; 32/110 (29.1%) experienced delayed initiation of breastfeeding, 23/110 (20.9%) reported that their children were not able to suck, and majority of 85/110(77.3%) complained of nipple pain in the early days. Multiple responses were allowed for this item.

Figure 5.27 summarises these results.

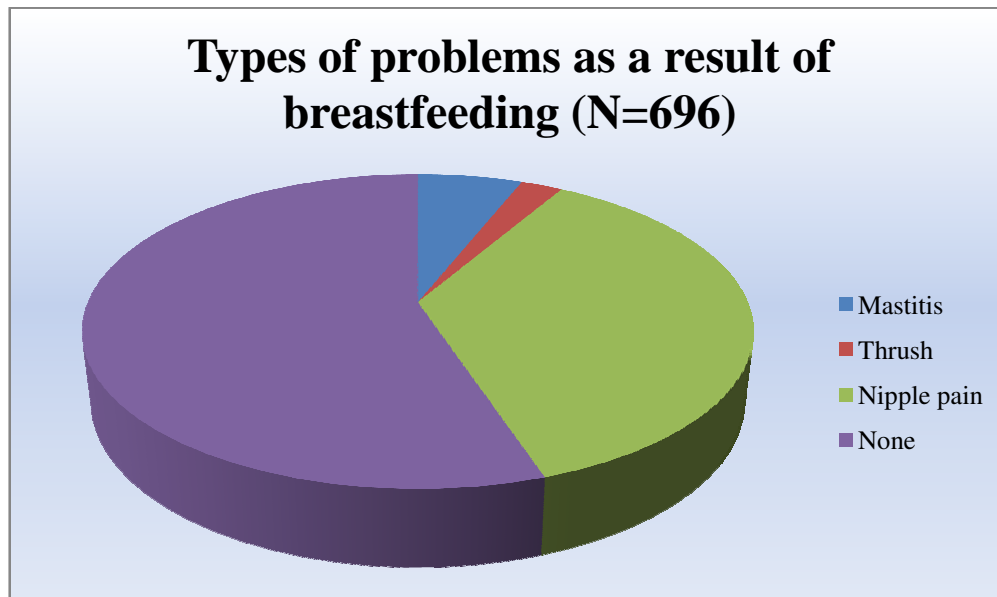


Figure 5.27: Types of problems as a result of breastfeeding.

The figure shows that 42/696 (6%) had experienced mastitis, and 17/696 (2.4%) had experienced thrush; nipple pain was experienced by 254/696 (36.3%), and 3/696 (0.4%) had general health problems. However, more than half of the women, 383/696 (54.9%), did not experience any problem with breastfeeding throughout the breastfeeding period. This finding revealed that fewer women had problems in the early days of breastfeeding when compared with the later days. In the early days, only 133 women had problems with breastfeeding but, as time passed, more women (313) (representing an increase of 135%) experienced some problems with breastfeeding.

5.6.2 Benefits of breastfeeding

The participants were asked whether they had ever been given information about the health benefits of breastfeeding for them and their baby and the various sources of information they had encountered. Table 5.27 summarises responses.

Item	Frequency	Percentage
Discussion of infant feeding during previous pregnancy	(N=736)	
Yes	532	72.3
No	204	27.7
Information about health benefits of breastfeeding	N=733	
Yes	621	84.7
No	112	13.3
Source of information	N=648	
Hospital	585	90.3
Home	33	5.1
Media	20	3.1
Other	10	1.5

Table 5.27 Health benefits of breastfeeding and sources of information.

The above table shows that the majority of women, 532/736 (72.3%), reported that feeding their baby was discussed during pregnancy, however, more than a quarter, 204/736 (27.7%), did not discuss feeding their baby with anyone during the previous pregnancy. A reasonable number of women (621/733 or 84.7%) received information about the health benefits of breastfeeding, while 112/733 (15.3) did not receive such information. With regard to the various sources of information about the health benefits of breastfeeding, the vast majority of women, 585/648 (90.3%), received such information from hospitals, while smaller numbers received it from other sources: 20/648(3.1%) from the media, 33/648 (5.1%) from home and others (10/648 (1.5%)) got their information from more than one source.

Table 5.28 summarises the respondents' knowledge of the benefits of breastfeeding.

Item	Frequency	Percentage
Benefits of breastfeeding	N=297	
Promotes infant's growth and development	194	65.3
Prevents illness	56	18.9
It promotes the mother's health	8	2.7
Cheap and available	39	13.1

Table 5.28: Respondents' awareness about the benefits of breastfeeding

The respondents were asked to outline the benefits of breastfeeding and their responses were captured into four categories: The responses show that 194/297 (65.3%) believe that breastfeeding promotes infant growth and development, 56/297 (18.9%) reported that

breastfeeding prevents illness, 8/297 (2.7%) said it promotes the mother's health, and 39/297 (13.1%) said it was cheap and available.

Figure 5.28 below shows the participants' opinions about the benefits of formula feeding.

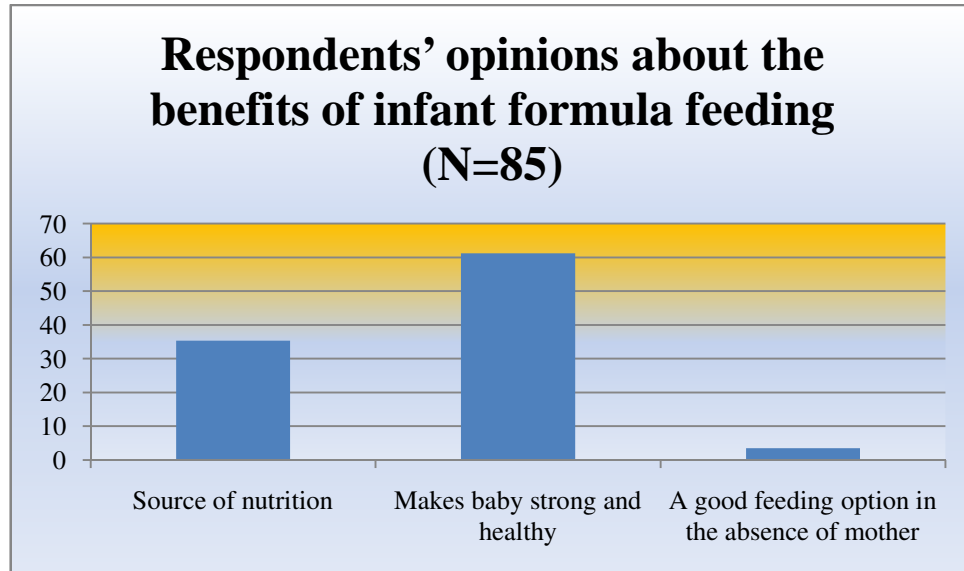


Figure 5.28: Respondents' opinions about the benefits of infant formula feeding.

The figure above shows that a significant number of women, namely 52/85 (61.2%), felt that infant formula made their children strong and healthy; over a third, i.e. 30/85 (35.53), felt that it was a source of nutrition for the infant, and 3/85 (3.5%) said that formula milk is a good option in the absence of the mother

5.7 Conclusion

The data collected during the administration of the questionnaires was analysed and presented in six major sections, namely: the distribution of the participants, their health behaviour with regard to feeding their infant children, the modifying factors that were relevant, the cues to action they had encountered, their intentions with regard to breastfeeding versus the use of infant formula, and the personal perceptions and experiences of breastfeeding. Data was presented using the Health Belief Model as a framework. The constructs of this model constituted the major headings of this chapter. Some items recorded a significant proportion of non-responses. This will be discussed in the discussion in Chapter Six.

Chapter Six: Discussion of Findings

6.0 Introduction

This chapter discusses the findings in accordance with the study objectives, which were set out in Chapter one. The study sought to describe current infant feeding practices and the factors that influence infant feeding in Plateau State, Nigeria. The study aimed to determine baseline information that will be useful for future interventions. In the first section of this chapter, infant feeding practices are discussed. Subsequent sections look at the demographic characteristics or profiles of the participants, and consider the factors that might influence infant feeding practices.

The constructs of the Health Belief Model, as presented in Figure 2.2, inform the organisation of the discussion of results. Consequently, the sample is presented first, (Section 6.1), then the health behaviour or actions is presented second (Section 6.2), followed by the modifying factors, such as socio-demographic characteristics, breastfeeding knowledge and beliefs (Section 6.3). Self-efficacy and cues to action are discussed next (Section 6.4), before discussing the breastfeeding intentions of pregnant women in Plateau State (Section 6.5), participants' personal perceptions (Section 6.6), summary of the chapter (Section 6.7), implication of the findings (Section 6.8) and ending with a consideration of the strengths and limitations of the study (Section 6.9).

Findings were discussed together with comparison with previous literature that relates to specific findings. This is necessary because, the HBM informed this study and findings were located within the aspects of the model. Therefore it was considered better to discuss the findings in relation to previous literature in the various aspects of the HBM.

6.1 Sample

The sample of this study is unique and considered of high quality because it cut across various socio-demographic characteristics, hence gives room for generalization of findings.

The current national demographic and health survey revealed that 98% of children in Nigeria were breastfed (National Population Commission (NPC), 2013), suggesting that breastfeeding is almost universal in Nigeria. The power analysis performed in the planning of this study was done at prevalence rate of 50%, because the prevalence of breastfeeding in Plateau State

specifically was not known. This was suggested by Suresh and Chandrashekera (2012). The attrition rate was placed at 10% in the hope that this would take into account the instruments that might not be returned. Ultimately, a sample size of 864 was obtained. After data collection, only 763 instruments were successfully retrieved, and this represents 88.3% against the expected 90%.

The initiation rate of breastfeeding for the first day was estimated at 68% in Nigeria (Federal Ministry of Health [FMOH], 2009). Estimating the required sample size and an analysis base of 68% will give about 400 participants. Based on this, the researcher performed an analysis with variables that had 80% of response (610 participants), working on the assumption that the unknown estimate of Plateau State may be a little above or below the national estimate.

This study retrieved information about infant feeding between birth and the first two years of life. The inclusion criteria reported in Chapter 3 required woman to have had a previous baby who must have lived for at least 24 hours. It was possible that some women had lost their infants after the first day and they thus might not be able to provide information about questions related to infant feeding after this period. This might in fact have contributed to some non-responses to questions about infant feeding in the later periods.

The sampling principle was to ensure equal participation of women from primary and secondary facilities and across senatorial zones. The distribution of respondents according to type of facility and senatorial zone is presented in Table 5.1. Almost equal numbers of participants were recruited from the various health facilities and senatorial zones. Ultimately, however, most of the respondents (50.6%) were recruited from secondary facilities and the majority (35.8%) were recruited from the northern zone. This slight variation arose as a result of the non-return of some of the questionnaires.

6.2 Health Behaviour: Infant Feeding Practices

In this section, infant feeding practices are presented; these include initiation and frequency of feeding, prelacteal feeding; feeding at discharge or 48 hours after birth; exclusive breastfeeding rate in Plateau State, and overall duration of breastfeeding and infant feeding of previous children.

6.2.1 Initiation and frequency of feeding

The response rate to questions about when participants initiated feeding their previous babies was 89.4% (n=682). This response rate is reasonable and falls within the overall target of 610

participants. Only 33.1% (n=226) of the participants reported that they had initiated breastfeeding within the first 30 minutes of birth (Figure 5.1), as recommended by the Baby Friendly Hospital Initiative (BFHI) (UNICEF, 2005; UNICEF, 2013). Most women (71.1%) reported that they fed their babies within the first hour of birth. Thus, a reasonably high number of women initiated breastfeeding within the first hour, but a far smaller percentage initiated it within the first half hour of delivery.

The proportion of babies that were fed within 30 minutes after birth is low compared to the national estimate of 38%, as reported by the FMOH (2009). This finding is similar to studies conducted in Kenya (Kimani-Murage et al, 2011), Uganda (Mutekanga and Ateyeoaza, 2007) and southern Nigeria (Okolo et al, 1999; Oregie, 1998), where low rates of early initiation of feeding were reported. However, the proportion of women that initiated feeding within the first hour after birth was reasonable when compared with the report by Barros, Ronsmans, et al (2012) in which they examined 54 countries to assess equity in maternal, newborn and child health intervention. They concluded that 46.4% of women initiated feeding within the first hour of birth in African.

The BFHI also recommends that babies be fed on demand (UNICEF, 2005), that is, feeding whenever the baby indicates interest. The response rate to questions in this regard was also reasonable, viz. 94% (n=717). Just after half of the women, 55.7% (n=399), reported that they did indeed feed their babies on demand (Figure 5.2). However, although it seems that feeding on demand was widely practised, a reasonable proportion of respondents seemed to be unaware of this practice. Moreover, about a quarter of the participants (n=178) could not remember how frequently they were feeding their baby.

6.2.2 Prelacteal feeding

Almost all the women (98.8%, n=723) responded to the question relating to the type of food they had given their previous baby for its first feed (Table 5.2). The findings showed that the vast majority of the women (92%) gave their babies breast milk for its first feeding (n=664), thus suggesting that breastfeeding was almost universal among this population sample.

However, it also indicates that a small number of women were still practising prelacteal feeding, although this practice has been identified as one of the major barriers to early initiation of breastfeeding (UNICEF, 2013). Prelacteal feeding means that the babies receive something other than breast milk for their first feed. Some of the reasons for prelacteal feeding include; inadequate milk production and health challenges that delayed breastfeeding. Women

who gave glucose, herbs or water to their babies believed that this would make the baby stronger and healthier, than if they had given it breast milk. The rate of prelacteal feeding in this study (8.2%, n=59) was far lower than the national estimate of 56% (FMOH, 2009).

Studies have revealed that the introduction of prelacteal feeds does not only affect the physiological process of lactation, but it also exposes the infants to diseases like diarrhoea and pneumonia (UNICEF, 2013). Moreover, women who practice prelacteal feeding, for whatever reason, may find it difficult to establish breastfeeding in the early days, because of the absence of stimulation by the baby's mouth, which lays the foundation for initiating breastfeeding (UNICEF, 2013).

The high proportion of women who breastfed immediately after birth is a good indicator of adherence to the BFHI recommendations, and is consistent with the conclusions of Kowayin et al(2001) and the report of the national demographic and health survey (NPC, 2014). Other studies in developing countries have reported prelacteal feeding among women in the first 6 months (Aborigo et al, 2012; Kimani-murage et al, 2011; Sapna et al, 2009).

6.2.3 Feeding at discharge or 48 hours after birth

The rates of exclusive breastfeeding, at discharge in the case of women who delivered at the hospital or at 48 hour after delivery for those who delivered their babies at home, were reasonable (Figure 5.3). A small percentage of women (6.3% or n=45) reported that they used mixed feeding, (combining breastfeeding and infant formula). It is also important to note that a small number of women (2%, n=14) reported that their neonates were not feeding at this time. This may not mean that their babies were not feeding when they were discharged from the hospital, because it is highly unlikely that this would have happened. In that case, it is more likely that the mother and her baby would have been discharged from the labour ward to the paediatric unit for further care. Since the question asked whether the mother was breastfeeding her baby at discharge, or 48 hours after delivery in the case of a home delivery, it can be concluded that these women were still in hospital 48 hours after delivery, and that they – or their newborn – might have experienced health problems that separated them from their neonates for a long time.

The relationship between feeding at discharge or at 48 hours after delivery, and the place of delivery as well as the type of delivery, is analysed in Section 6.3 below where place of delivery and type of delivery are discussed as modifying factors.

6.2.4 Exclusive breastfeeding rate in Plateau State and associated factors

The main question, which elicited information about the proportion of women who breastfed exclusively for six months (Figure 5.5) had a response rate of 96.6% (n=737). It was felt that this sample was adequate and that it would provide the power required for regression analysis. The mean duration of exclusive breastfeeding was found to be 5.5 months (SD ± 2.4). Most of the respondents reportedly breastfeed exclusively, but only 36.2% (n=267) reported that they did this for six months (Figure 5.5). This suggests that most of their babies were not exclusively breastfed for the recommended duration. They might thus have been exposed to various health problems or disabilities (Black, Morris et al, 2008). The exclusive breastfeeding rate in this study is higher than the national level of 17% (NPC, 2014) but lower than the WHO global estimate of 39% (UNICEF, 2013). A steady decline in exclusive breastfeeding from six weeks is revealed in Figure 5.4. In other words, the exclusive breastfeeding rate increased from discharge to one week after birth, and then gradually declined; it remained reasonable until six weeks when the proportion of women exclusively breastfeeding began to drop until the baby was 24 weeks – or 6 months – old. It is possible that these women also received less and less support, as time passed. By six months, only 46.2% were exclusively giving their babies breast milk, but this does not mean that all of these babies had received only breast milk for the entire period from birth to six months. For example, a baby might have been fed only breast milk from birth until 12 weeks; then, perhaps due to the ill health of the mother or due to a period of prolonged separation from the mother, it might have been given infant formula at 13 weeks. Thereafter, once the mother had recovered or returned, the baby might have been given only breast milk once more from 15 weeks to 24 weeks. Consequently, when answering the question for this study, these women might report that they were giving their baby breast milk only at 24 weeks, even though they had not exclusively breastfed their children for the entire period. Therefore, even if 46.2% of the participants said that were exclusively breastfeeding at 24 weeks, it did not necessarily mean that they had exclusively breastfed for the entire period of 6 months.

About 36.2% of the participants reported that they had introduced other feeds after 6 months (Figure 5.5), and this represents the actual proportion of women who exclusively breastfed their infants for 6 months. This implies that 10% (the difference between 46.2% and 36.2%) may have been giving other feeds at some point. In the same period that the proportion of women who were exclusively breastfeeding was declining, the proportion of women providing

mixed feeding to their infants was increasing (Figure 5.4). It was regarded as reasonable that women would breastfeed their babies in the early days; women who gave anything other than breast milk had been advised to do so or had wanted to give their babies something else (Figure 5.7). This suggests that some of the women may be ignorant of the importance of breastfeeding for their baby. Mixed feeding does not only increase the chances of infection among infants but also has negative implications for HIV-positive mothers (UNICEF, 2013). Exclusive breastfeeding is not only possible for HIV-positive mothers, but the more strictly an HIV-positive mother breastfeeds her baby, the higher its survival rate (Iliff et al, 2005). Interestingly, mixed feeding increases the risk of mother to child transmission of HIV, whereas exclusive breastfeeding increases the chances of not infecting an infant at least three-fold (UNICEF, 2013). Interventions, especially among HIV-positive women, should focus on discouraging mixed feeding and encouraging exclusive breastfeeding. The lives of many infants will be saved and the burden on health facilities will be reduced, if women are supported to breastfeed exclusively for 6 months.

In this study, several reasons were given for not exclusively breastfeeding their babies for the entire duration of 6 months: they included health problems, inadequate production of breast milk, another pregnancy, advice received from the hospital, the nature of their work or their studies, and the baby's refusal to suckle at the breast (Figure 5.6). It is likely that the hospital would have advised women to breastfeed exclusively, except on medical grounds. Some women mentioned that they stopped breastfeeding because they had fallen pregnant again; UNICEF (2013) reported that almost every woman would breastfeed, if she was given the necessary support to overcome any barriers to successful breastfeeding.

The finding in relation to reduction in the proportion of women that exclusively breastfed with increased infant age is consistent with Lawoyin, Olawuyi et al (2001) who also observed the same trend in a study in south-western Nigeria and Matias, Nommsen-Rivers, and Dewey, 2012) in Peru.

The findings with regard to the reasons for the short duration of exclusive breastfeeding are consistent with those of previous studies. These include: low milk production (Jager, 2012; Lamontagne, Hamelin et al, 2008; Mutekanga and Atekyereza, 2007; Muluye, 2012; Raffle, Ware et al, 2011), maternal illness (Doherty, Sanders et al, 2012), time constraints (Jager, 2012; Raffle, Ware et al, 2011; Ugbaaja, Berthrand, et al, 2013), and the infant's refusal to suck (Jager, 2012; Lamontagne, Hamelin et al, 2008) as problems that needed to be tackled to ensure successful breastfeeding.

In summary, the rate of exclusive breastfeeding for six months in Plateau State of 36.2% is higher than the national estimate of 2013 (17%), however, the rate is still lower than the global estimate for developing countries, namely, 39%. moreover, exclusive breastfeeding reduces with increasing infant age especially after 6 weeks. Factors like health conditions; inadequate milk production, interpersonal influence, the baby's refusal to suck, and inadequate breastfeeding support have all been identified as potentially influencing infant feeding in this setting.

6.2.5 Overall duration of breastfeeding and infant feeding of previous children

This section looks at the duration of breastfeeding of the previous baby and at associated factors with regard to the breastfeeding of previous children.

6.2.5.1 Overall duration of breastfeeding of previous children

A relatively high percentage of participants (89.4%, n=682) provided information about how long they had breastfed their previous baby (Figure 5.8). The overall duration of breastfeeding was generally high; the analysis of the results revealed a mean duration of 15 months (SD±4). This is however not as long as the recommended period of 2 years. About one third of the participants (34.9%, n=238) said that they were able to breastfeed for more than 18 months. The WHO recommends a feeding duration of 2 years, after 6 months of exclusive breastfeeding (UNICEF, 2013). The FMOH of Nigeria reported that children in Nigeria were breastfed for duration of about 18.2 months (FMOH, 2009). The findings of this study revealed a lower duration than the national estimate and the WHO benchmark.

Of those who provided information about their previous breastfeeding experiences, (n=655), about one third (31.1%, n=204) said that they would like to have breastfed for longer (Figure 5.9). These women may require support in achieving their goal. Women's reasons for terminating breastfeeding were, for instance, that they had fallen pregnant again, that their baby was refusing to suck, that the baby was due to be weaned, and that they had several health reasons (Figure 5.10). Others included the nature of their job and their preferences around breastfeeding versus formula feeding.

Unexpected pregnancies were reported by a 14.5% of respondents (n=94). Although pregnancy does not stop breastfeeding, this has revealed the effect of unwanted pregnancy on infant feeding. The second reason for terminating breastfeeding was that the baby refused to suck on

their own at a particular time. This may be attributed to the early introduction of a weaning diet. Another reason for terminating breastfeeding reported was health reasons.

6.2.5.2 Feeding history of previous children

The response rates for the question related to feeding of previous children were poor, especially with regard to the second child. Therefore, any conclusions must be treated with caution. The response rate decreases with an increase in the number of children. Two factors may be associated with this. Firstly, the study population had a low parity (2.6 children). A woman who has had only one child will not be able to provide any information for a second child, and a woman with two children will not be able to provide information for a third child. Secondly, information recall for a longer period than three years was required, and some women may find it difficult to recall such details, especially for the third or fourth child due to the time lapsed and muddling the information of one child with that of another.

The infant feeding history of the respondents revealed that, the more children they had, the less they would breastfeed; instead, they would favour mixed and formula feeding (Figure 5.11). This is consistent with the position of Uchendu et al (2009) who reported that high parity is associated with suboptimal breastfeeding, due to the pressure of having to care for other children in the home. However, some studies contradict this finding. For example, Ukegbu et al (2010) and Qureshi et al (2011) reported that a high breastfeeding rate has been reported to be associated with multiparity.

Logistical regression analysis was not performed because of the poor response rates for this section.

6.2.6 Summary: Infant feeding practices

In this section, the relevant health behaviours or actions were discussed, and identified several factors that could affect these actions. The initiation of breastfeeding within the first hour after delivery was reasonably widespread, but breastfeeding within the first half hour was not quite as common. It was found that about 36.2% women in the study population would breastfeed exclusively for 6 months, and that exclusive breastfeeding reduced with increasing infant age. Possible reasons for not breastfeeding their children exclusively included health conditions, inadequate milk production, interpersonal influence, the baby's refusal to suck, and inadequate breastfeeding support. Feeding on demand was widely practiced. Ultimately, the total duration of breastfeeding was found to be high, with some women stating that they would have loved to breastfeed for longer.

6.3 Modifying Factors

This section presents the modifying factors that influence infant feeding. The factors are socio-demographic variables, which include maternal age, gestational age, marital status, parity, educational level, employment status, economic status, number of children in previous pregnancy and various factors related to previous pregnancy and birth. The first part thus presents the socio-demographic profile of the respondents (6.2.1), and the second part presents the relationship between these factors and infant feeding practices, and tests the stated hypotheses (6.2.2).

6.3.1 Socio-demographic profile of participants

The profile of the participants, or their relevant socio-demographic characteristics, is an important aspect of the modifying factor in terms of the Health Belief Model

6.3.1.1 *Maternal age*

The response rates for the questions with regard to age, gestational age and parity were 99.2% (n=757), 73.4% (n=560,) and 94.6% (n=722) respectively (Table 5.3).

The mean age of participants was 27 years (SD ± 5.2). About 13% (n=96) of participants were 20 years and below, while 2.9% (n=22) were at least 40 years old. According to the national demographic and health survey, 23% of adolescents between 15 and 19 years are already mothers or pregnant (NPC, 2014). The results obtained in our sample population indicated a lower proportion of such young mothers, and thus lower prevalence of young motherhood than suggested by the national survey.

6.3.1.2 *Gestational age*

The response rate for questions with regard to gestational age was lower than the response rate in the previous section (73.4%, n=560). The mean gestational age was 24.3 weeks, SD ± 4.9 (Table 5.3). Most participants (91.4%) were at least in the second trimester (n=512), which suggests that pregnant women in Plateau State tend to begin receiving antenatal care late in their pregnancies.

6.3.1.3 *Maternal level of education*

The rate of response to questions regarding level of education was high (98.4%, n=751). Most women (93.7%, n=704) had received formal education (i.e. they had undergone primary, secondary or tertiary education) (Table 5.6). Only 4.7% (n=36) had received no formal

education. The fact that a third (33%) had attended tertiary education (n=252) is an indication of a high literacy rate in the study population, especially when compared with reports of the 2013 demographic and health survey, which revealed that less than 10% of women in Nigeria studied to the tertiary level (NPC, 2014). It moreover reported that 38% of women in Nigeria had no form of formal education (NPC, 2014). Based on this, it can be concluded that the study population has a higher literacy rate than the national population.

The chi-squared analysis (Table 5.4) revealed that the relationship between maternal age and level of education was statistically significant ($P < 0.001$). The proportion of women who attended tertiary education increased with increased age. This is consistent with the NPC's report (2014).

Another chi-squared analysis of the relationship between level of education and parity (Table 5.5) suggested a significant relationship ($P < 0.001$). Increased parity is directly proportional to non-attendance of formal education and inversely proportional to attendance of tertiary education. The results from this analysis thus suggest that, the more educated women are, the less they are likely to have many children.

6.3.1.4 Parity

The response rate for questions around parity was reasonably high (94.6%, n=722). It was found that the average number of children per woman was 2.4 children ($SD \pm 1.6$), indicating a fairly low fertility rate (Table 5.3). It is considered a low rate, because the estimated total fertility rate in Plateau State in 2008 was 5.3 (Plateau State Government, 2009), while the national estimate of total fertility rate, following the current demographic and health survey, was 5.5 (NPC, 2014). The finding in this study was not surprising, however, because the mean age of this population is quite low, indicating that they are still young and thus likely to have more children. Another possible reason for the low rate of fertility in this population could be the high rate of formal education, which may translate into greater awareness and utilization of family planning services; this may, in turn, increase the chances of spacing children further apart.

6.3.1.5 Marital status

Few of the women (10.2%, n=73) were single parents (Table 5.6). Single parenthood is a universal phenomenon, though it is more pronounced in developed countries than in developing countries like Nigeria (Essien and Bassey, 2012). About 13 million of families in America were headed by single parents in 2006, and 80% of these were headed by women

(Essien and Bassey, 2012). There is a dearth of information about the proportion of women who are single parents in Nigeria. However, the recent national health survey in the country revealed that 19% of households are headed by women (NPC, 2014), though it was not clear if they were single women. Women are more likely to be single parents than men, and this could pose numerous challenges for child rearing practices like breastfeeding.

6.3.1.6 Maternal employment

The response rate with regard to questions relating to maternal employment was excellent (99.9%, n=762). Participants were asked if they were employed at the time of the study, and not if they were employed when they had their previous child. The findings show that about 40% of the women were housewives (n=303), in other words, they were unemployed. Just less than half (49%, n=374) of the respondents were employed or self-employed (Table 5.7). This finding is consistent with the 2008 report of the Plateau State Government (2009) in which the female employment rate was estimated at 37.4%. It is possible that employment of women has increased since 2008. A statistically significant relationship exists between employment and level of education ($P < 0.001$). The proportion of women who were civil servants or self-employed increased with increased level of education (Table 5.8). The high rate of formal education might also have translated into a high proportion of employment. This is an expected relationship under normal circumstances.

6.3.1.7 Monthly family income

With regard to the questions concerning monthly family income, a reasonable number of responses were received (82%, n=626). The mean monthly family income was N29,109 (SD \pm 5395) (179.40 USD, SD \pm 33.2) in a month. More than half of the respondents earned a maximum of N19,000 (122.40 USD) a month⁴ (Table 5.7). Earning this amount in a family with more than two children indicates a low socio-economic status, because it means that each family member will be living on about a dollar per day. This finding was unexpected, because about half of these women were either civil servants earning monthly salaries or self-employed. However, factors like poor remuneration, the nature of businesses and the husband's occupation – or lack of employment – could influence family income too.

⁴Exchange rate of naira to US dollar as at 15th August 2014 is N 155.23 (Central Bank of Nigeria).

6.3.1.8 Summary: Participants' profile

The above findings indicate that the women who participated in the study cut across various socio-demographic and economic groups. The study population is thus representative of a diverse population.

Few of the women were younger than 20 years old, and most were in their second trimester of pregnancy. The fertility rate was lower than the state and national estimates (2.4 ± 1.6 children). The prevalence of single motherhood was 10.2%. There was a high level of formal education, which was associated with high maternal age and parity. The relatively high literacy level in the study population translated into a high rate of employment; the relationship between education and employment was statistically significant. Nonetheless, the average monthly family income was low. All of the above imply that the findings from this study were not from a particular group of women but from a heterogeneous population, which in turn helps to enhance the external validity of the results.

6.3.2 Relationship between socio-demographic profile and breastfeeding practices

This section focuses on the relationship between infant feeding practices and several variables, namely, the number of children in the participant's previous pregnancy, factors related to the previous pregnancy and delivery, the participant's age and her gestational age, as well as her parity, educational level, employment status, marital status, and economic status. The secondary null hypotheses stated in Chapter one will be tested herein.

6.3.2.1 Number of children in last pregnancy and infant feeding

A response rate of 94.3% ($n=719$) was recorded for this item. The prevalence of multiple pregnancies in this population was 90 per 1000 (Figure 5.12). Nonetheless, most women (91.2%, $n=656$) had singleton pregnancies, and only a few had multiple pregnancies. The number of children in the previous pregnancy was not a determinant of infant feeding practices in this setting ($P>0.05$).

The prevalence of multiple pregnancies in Nigeria was 40 per 1000 births before 1995 (Keith and Papiernik, 1995), so the current findings indicate an increase in the prevalence of multiple gestations over the years.

6.3.2.2 Antenatal care and infant feeding

A high percentage of women (96.7%, n=738) responded to questions about antenatal care and infant feeding relating to the previous pregnancy. The fact that almost all of the respondents (95%, n=698) reported attendance at antenatal clinics during their previous pregnancy, suggests a high patronage of antenatal services in Plateau State (Table 5.9). Only 5.4% (n=40) reported that they had not attended antenatal clinic previously. This is an impressive statistic, because the last national health survey revealed that one third of women in Nigeria had received no antenatal care at all (NPC, 2014).

The regression analysis in Table 5.17 reveals that women who attend antenatal clinics during pregnancy are three times more likely to intend breastfeeding their babies than women who did not attend antenatal clinics. This finding, which is consistent with the position of Ogunlesi (2010), who posited that attendance at antenatal clinics benefits breastfeeding. It is estimated that 84% of antenatal services in Plateau State are delivered by skilled personnel (Plateau State Government, 2009); as such, these services are likely to have a positive impact on women's infant feeding choices.

6.3.2.3 Place of delivery and infant feeding

The response to questions about the type of delivery during the previous pregnancy was reasonably high (97.2%, n=742); most women (82.3%, n=611) reported that they had delivered their previous children in the hospital (Table 5.10), which indicates a high prevalence of hospital delivery in the study population. According to the recent national survey, however, it was estimated that 33% of deliveries had been conducted in the hospital (NPC, 2014). The high proportion of hospital delivery in this study should thus be interpreted with caution. It may not necessarily reflect the real situation accurately, because these women were, after all, recruited from clinics and not from the community. The results might have been very different if this survey had been conducted in the community, and the percentage of home deliveries might have been much higher.

Analysis was performed to determine the impact of place of delivery on breastfeeding. The results of the logistical regression analysis of various breastfeeding practices as a function of place of delivery suggest that women who delivered in the hospital are less likely to feed their babies on demand than women who delivered at home ($P < 0.001$). This finding is inconsistent with the opinion of Ogunlesi (2010), who reported that home delivery has been associated negatively with breastfeeding practices.

A chi-squared analysis of feeding at discharge/48 hour after birth and place of delivery suggests a statistically significant relationship (Table 5.11). This further reveals that women who delivered in the hospital are more likely to be breastfeeding at discharge or at 48 hours after birth than those who delivered at home.

A logistical regression analysis of early initiation of breastfeeding, exclusive breastfeeding, overall duration of breastfeeding and breastfeeding intention as a function of place of delivery shows that relationship is not statistically significant relationships. It has been reported that women who delivered in hospital are more likely to breastfeed exclusively and longer (Ogunlesi, 2010). But this study did not establish that fact. The above finding raises questions around the quality of postnatal care in these hospitals and their baby-friendly status. However, the quality of the participants' recall could also be questioned here.

Since hospital staff promote and encourage mothers to feed their babies on demand, until they are discharged from the hospital, or 48 hours after delivery, it is important to consider improving postnatal support services and also to ensure that all women practice feeding on demand, as recommended by WHO (UNICEF, 2005). Instituting an efficient follow-up program that will assist women after they have been discharged from hospital, may further improve breastfeeding practices in this setting.

6.3.2.4 Type of delivery and infant feeding

A good proportion (95.8%, n=731) of respondents provided information about the type of delivery they had experienced with their previous babies. Most of the women (92.4%, n=676) reported that they had a normal delivery (Table 5.10); such a high rate is an indication of good maternal health in the study population. The rate of caesarean delivery was higher than the estimate for West Africa, although it still fell within the WHO estimate of 5 to 15% (Betrán, Merialdi, Lauer, Bing-Shun, Thomas, Van Look, and Wagner, 2007).

The chi-squared analysis presented in Table 5.12 shows that the relationship between breastfeeding at discharge and type of delivery is statistically significant. It also revealed that a higher proportion of women who had an assisted delivery were likely to breastfeed at discharge or 48 hours after delivery. It is possible that women who had an abnormal delivery received more attention from the health workers and that this may have resulted in better support for breastfeeding. This is not consistent with Li, Laung et al (2004) who attributed formula feeding with assisted delivery and Patel, Liebling et al (2003) who reported that, type of delivery had no impact on breastfeeding.

The analysis presented in Table 5.17 revealed that type of delivery was not associated with early initiation of feeding, feeding on demand, exclusive breastfeeding, duration of breastfeeding and breastfeeding intention. This finding did not align with the assertion of Imhonde et al (2012) who reported that place of delivery was a strong determinant of infant feeding choice. This calls for a reassessment of hospital breastfeeding practices in Plateau State.

6.3.2.5 Use of pain relief during labour and infant feeding

An adequate number of women (84.7%, n=646) provided information regarding the use of pain relief during labour. This information was sought to determine whether the use of pain relief had an impact on breastfeeding.

It emerged that the use of pain relief during labour was not common among women. About 75% (n=482) did not use any pain relief during labour, while 12.1% received an epidural injection, pethidine, gas or general analgesia to relieve pain. Interestingly, 13.3% reported using water as a form of pain relief during labour (Table 5.13). It was not clear, however, whether these women were referring to drinking water orally or whether they were referring to intravenous infusion. The questionnaire did not provide an opportunity for women to explain how they used water as a pain relieving agent during labour. The Irish study (Begley 2008), on which was the questionnaire used herein was based, had also not provided a detailed explanation of how water had worked for women, but it did report that the use of pain relief did not affect breastfeeding.

The analysis presented in Table 5.14 revealed that the relationship between time of initiation of breastfeeding and use of pain relief during labour was statistically significant ($P=0.006$). The proportion of women who did not use any pain relief, and who initiated feeding within 30 minutes or one hour after birth, was higher than the proportion of women who used pain relief. This finding suggests that the use of pain relief during labour does affect the initiation of feeding. This is inconsistent with Halpern, Levine, Wilson, MacDonell, Katsiris, and Leighton (1999) and Riordan, Gross, Angeron, Krumwiede, and Melin, (2000) who reported that pain relief during labour had no effect on breastfeeding. Priority for women who had a pain relief during labour may be necessary in ensuring early initiation.

6.3.2.6 Weight of baby at birth and infant feeding

A reasonable response rate was obtained for this question (92.3 %, n=704). About 11% of babies weighed less than 2kg (Table 5.13). About one third of respondents (27.8%, n=212) could not remember the weight of their previous babies at birth, indicating a poor quality of

recall for this question. As a result of inadequate power, therefore, analysis was not performed with this variable.

6.3.2.7 Employment and infant feeding

As discussed in Section 6.2.1, most of the women who participated in this study were employed. Regression analysis revealed that housewives or students were 42% more likely to initiate feeding earlier and 13% less likely to give other feeds within the first six months of life than employed women or business women. This suggests that the particular occupation or type of employment of women may have a negative impact on the early initiation of breastfeeding and exclusive breastfeeding, and it agrees with the reports of Velpuri (2004) and Ajibade, Okunlade, et al (2013). Ukwuani (2003) similarly reported a negative association between maternal employment and breastfeeding.

In this study, most of the spouses of the participating women were employed, either as civil servants or self-employed. Their types of occupations or forms of employment is likely to influence the infant practices of their wives; for instance, spouses whose occupations keep them away from home for long periods of time may not be able to render sufficient support.

The participants' responses revealed that more than half of the women had been working during their previous pregnancy (Table 5.15) and that they were working for an average of 6.9 hours a day ($SD \pm 2.6$). This suggests the potential of suboptimal breastfeeding, if adequate arrangements had not been made for them to breastfeed at work. Moreover, most of the women reported having a salaried job (Table 5.16), which indicates that more women are joining the work force. More than one third (189) of these women took their babies to work with them.

The majority of the women were employed or self-employed (53.1%, $n=250/471$) (Figure 5.14). Most of the women returned to work between one and three months after birth, and on average stayed at home before returning to work for 4.9 months ($SD \pm 2.2$) (Figure 5.6). Ideally, mothers should remain at home with the baby, breastfeeding on demand, for the first six months of its life. The fact that they returned to work earlier indicates an early separation from their babies. On returning to work, over half of the respondents (57.3%, $n=466$) either employed someone or asked a relative to look after their babies while they were at work. Less than half (40.6%, $n=189$) took their children to work, probably because they had a breastfeeding facility at work. Women who left their children at home with a carer were thus away from their children for about seven hours a day (given an average working day of 7 hours). This is not good for a breastfeeding mother, as it will make feeding on demand

impossible. It may also lead to a shorter duration of exclusive breastfeeding and even the early cessation of breastfeeding. The time of return to work after delivery has been reported to have an impact on infant feeding practices (Jager, 2012; UNICEF, 2013).

About 58% (n=488) had a place at work where they could breastfeed or express breast milk if they wanted to (Figure 5.16). The availability of such a breastfeeding facility has been positively associated with breastfeeding (Marinelli et al, 2013). It is concluded here that breastfeeding practices are associated with maternal employment. Therefore, the null hypothesis that states “there is no relationship between maternal employment and infant feeding practices” is rejected.

6.3.2.8 Maternal age and infant feeding

The average age of women in this study was 27 years (SD ± 5.2). Logistical regression analysis revealed that maternal age independently predicted early initiation of breastfeeding and overall duration of breastfeeding. Women below the age of 30 years are 2.3 times more likely to initiate breastfeeding early and 2.4 times more likely to breastfeed for a shorter duration than women who are 30 years old, or older ($P < 0.05$). This implies that younger maternal age is positively associated with early initiation of feeding, while older maternal age is positively associated with longer duration of breastfeeding. This finding agrees with the report of Brown et al (2011), where younger maternal age was associated with the early cessation of breastfeeding. This also suggests that there is a relationship between maternal age and breastfeeding practice. Therefore the null hypothesis that states, no relationship between maternal age and infant feeding is rejected ($p < 0.05$).

6.3.2.9 Maternal education and infant feeding

The level of formal education of the respondents was reasonable, as discussed in Section 6.2.1, which suggests that significant progress has been made in Plateau State with regard to the education of women.

A regression analysis to determine the infant feeding practices of women as a function of education indicated a result that was statistically not significant ($p > 0.05$) (Table 5.17). This may be attributed to the fact that most of the women participants reported that they had been formally educated. Another model to predict the likelihood of breastfeeding with education above the secondary level was also not significant; this is inconsistent with the opinions of Adetunji (1995) and Ogunlesi, (2010) who reported that high maternal education is associated with prelacteal feeding and with early cessation of breastfeeding. Therefore, education may not

be a strong determinant of infant feeding in this setting, and it may be inferred that the relationship between education and infant feeding is not significant. This finding is consistent with Oreigie, (1998) who reported that maternal level of education is not a determinant of infant feeding in Nigeria. However, several studies are inconsistent with this finding as they concluded that maternal education is associated with exclusive breastfeeding (Li,Zhang et al, 2004; Uchendu, Ikefuna, and Imodi, 2009; Qureshi,Oche et al, 2011).

6.3.2.10 Marital status and infant feeding

The ratio of single to married women in this study was about 1:8, and marital status was found to be a predictor of breastfeeding practice. The logistical regression analysis revealed that single women were four times more likely to breastfeed exclusively for a shorter period of time than married women ($P<0.05$). This suggests that being single is negatively associated with duration of breastfeeding. This finding is consistent with Lamontagne, Hamelin (2008) and Ajibade et al (2013) who reported from studies in the United States of America and in south-western Nigeria respectively, that single women were less likely to breastfeed for longer periods of time; they attributed this to a lack of support from the partner. In this study there was an association between marital status and infant feeding practices. This suggests that single mothers in Plateau State may need more support to breastfeed their babies for longer.

6.3.2.11 Parity and infant feeding

Parity refers to the number of times a woman has delivered a foetus; in this study, it is defined as the number of children who lived for at least 24 hours. The average number of children was 2.4 ± 1.6 and 90.5% of the respondents had fewer than 5 children. Women who have fewer than 5 children are 2.3 times more likely to give other feeds within the first six months of the infant's life, than women who have five and more children ($P=0.001$). This suggests that an increase in the number of children, or parity, has a positive association with exclusive breastfeeding for six months. This indicates that additional children give more confidence. Women with more children are likely to have more experience with breastfeeding and thus should be able to overcome the barriers to successful breastfeeding than women with fewer children. This supports the assertion of Denton (2011), but is contrary to the positions of Nagy et al (2001), and Uchendu, Ikefuna and Emodi (2009).

Having many children generally means an increased capacity to breastfeed exclusively as a result of experience acquired over time. But the case is different for overall breastfeeding. Although there is a higher degree of recall bias due the period required to recall information,

Figure 5.11 does show that, as the number of children increased, the proportion of women breastfeeding exclusively reduced.

The implication of this finding is that exclusive breastfeeding can be improved if women with fewer children are given additional support to breastfeed exclusively for longer periods. The relationship between infant feeding practices and parity is thus significant. This means that the relationship between parity and infant feeding is statistically significant. ($p < 0.05$).

6.3.2.12 Economic status and infant feeding

Several studies in many countries have identified socioeconomic status as an important determinant of infant feeding (Alemayehu, Wongsawasdi et al, 2009; Ekanem, Ekanem et al, 2012; Okeh, 2010). The average monthly family earnings of the respondents (N29, 109, SD ± 5395) and the number of children (2.4, SD ± 1.6) in these families mean that most of the women fell into the low income group. More than half of the respondents reported a monthly family income of less than N20,000. Analysis reveals that women from families that earn less than N20, 000 a month are 36% less likely to initiate breastfeeding early and 1.7 times (71%) more likely to introduce other feeds within the first six months of life than women from families that earn N20, 000 or more in a month. Women from families with lower monthly earnings are likely to delay the initiation of breastfeeding and to breastfeed exclusively for less than six months. It is therefore concluded that low economic status has a negative association with breastfeeding practices.

6.3.2.13 Hypothesis testing

The hypotheses stated at the beginning of this study were that social, demographic and economic factors influence infant feeding in Plateau State, Nigeria.

The secondary null hypotheses were:

- HO1 There is no relationship between maternal age and infant feeding practice.
- HO2 There is no relationship between occupation/employment and infant feeding practice.
- HO3 Economic status does not affect the infant feeding practice of women in Plateau State.
- HO4 There is no difference in infant feeding practice by women from different educational backgrounds.
- HO5 There is no relationship between parity and infant feeding practice.

- HO6 There is no association between marital status and infant feeding practice.

The results of the analysis in Table 5.20 revealed the p values of the relationship between infant feeding and various independent variables, which were performed at the 95% confidence interval:

- The relationship between age and infant feeding was significant ($P < 0.05$), therefore HO1 is rejected. This implies that there is a relationship between maternal age and infant feeding.
- The test statistics suggest that there is a relationship between occupation and infant feeding ($P < 0.05$). Therefore, HO2 is rejected.
- A relationship exist between economic status and infant feeding ($P < 0.05$). This also means that HO3 is rejected.
- The statistical analysis indicates that educational background was not related to infant feeding ($P > 0.05$). This means that HO4 is accepted.
- Parity has an association with infant feeding ($P < 0.05$). This suggests that HO5 should be rejected.
- Marital status also relates to infant feeding ($P < 0.05$), meaning that HO6 cannot be sustained.

From the analysis above, it can be deduced that maternal age, occupation, economics status, parity and marital status are associated with infant feeding. Conversely, educational background is not related to infant feeding in this setting. Therefore, the stated primary hypothesis is sustained, meaning that socioeconomic and demographic factors influence infant feeding practices in this setting.

6.3.3 Summary: Modifying factors

This section looked at the modifying factors that could potentially influence infant feeding practices among the study population. The socio-demographic characteristics of the respondents revealed that these women were almost equally distributed across the three senatorial zones of the state. They were also almost equally recruited across primary and secondary facilities. The results further revealed that the respondents cut across various socio-demographic characteristics. Maternal age, employment, parity, marital status, economic status of the family, antenatal care, place of delivery, type of delivery, and use of pain relief were all found to be potential determinants of infant feeding in this setting. From the hypotheses one

can conclude that socio-demographic and economic factors influence infant feeding in this setting.

6.4 Cues to action and self-efficacy

Cues to action and self-efficacy are defined as factors or situations that move people to change behaviour (Denis, 1999). The influence of previous breastfeeding experience, marketing and advertisement of breastfeeding and formula feeding, family and friends (social circle), interpersonal and intrapersonal factors, breastfeeding problems, breastfeeding support, and breastfeeding confidence are thus factors that are discussed in this section.

6.4.1 Previous experiences with breastfeeding

This is an important affective state that enhances self-efficacy (Denis, 1999). Women must be assisted and encouraged to believe in themselves and change their behaviour for the better – in this case, breastfeeding their babies for as long as possible. A comparison of the previous total breastfeeding and anticipated overall breastfeeding indicates a significant relationship ($P = 0.002$). The anticipated total breastfeeding was higher than the previous. This also applies to the relationship between the duration of exclusive breastfeeding relating to the previous baby and the anticipated duration of exclusive breastfeeding related to the expected baby ($P = 0.003$). In this study, about one third ($n=204$) of the respondents wanted to breastfeed longer (Table 5.9). Perhaps they had faced a number of challenges, which prevented them from breastfeeding for longer. Perhaps they also did not believe that they could overcome these challenges and breastfeed for longer periods. Self-efficacy can be built through cues to action, which come in the form of support, either from trained health personnel or family and friends. Conversely, some of the participants were satisfied with how long they had breastfed their previous babies, which would most likely have increased their confidence and led them to anticipate being able to breastfeed in subsequent pregnancies too. This demonstrates the importance of breastfeeding experience for infant feeding practice; such experience was also identified by Denton (2011) as an important factor to influence breastfeeding. By implication, women who have little experience with breastfeeding or who were not satisfied with their previous breastfeeding experiences, may require additional support and assistance in order to breastfeed their next babies successfully. The same applies to women who had negative experiences with breastfeeding.

6.4.2 The influence of family and friends

The response rate with regard to questions on how respondents' families and friends fed their babies was 95.4 % (n=728). The findings in Figure 5.17 revealed that most of the women reported that they were aware of how their family and friends fed their babies and how they themselves were breastfed as infants. Women who have such knowledge are 70% (1.7 times) more likely to initiate feeding earlier and 62% less likely to breastfeed exclusively for a shorter duration than women who do not know. This implies that women are influenced by family and friends to feed their children in a particular way, especially as concerns the early initiation of feeding and the overall duration of breastfeeding. This finding is consistent with the assertions of Ekstrom (2003) and Sika-Bright (2010).

A discussion with family and friends to ascertain how they breastfed their babies thus might have positively influenced breastfeeding in this population.

6.4.3 Knowledge of respondents' feeding as babies

About 73% (n=517) of the respondents knew how they were fed as babies (Table 5.18).

Women who knew they were breastfed as babies are 55% more likely to initiate feeding earlier than those who do not know. Women, who knew how they were fed as babies, might also have been motivated to commence feeding early. However, as posited by Ekstrom (2003) in the context of Sweden, such knowledge does not seem to affect the overall duration of breastfeeding.

6.4.4 Marketing and advertising

Advertising is another important cue to action that could affect infant feeding practices. The percentage of responses to these questions in the questionnaire were reasonable and adequate for analysis. Most of the respondents indicated that they had seen an advertisement on breastfeeding as well as on the use of infant formula (Figure 5.18). The regression analysis revealed that women who had ever seen an advertisement about breastfeeding were 34% less likely to initiate feeding within 30 minutes after birth, and 3.6 times more likely to breastfeed exclusively for a shorter duration, than those who had never seen such advertisements. This suggests that current advertising in respect of breastfeeding in Plateau State does not have a positive impact on breastfeeding. It is also possible that the marketing of infant formula in the state has overshadowed the marketing of breastfeeding, and that this has had a negative impact on breastfeeding.

6.4.5 Interpersonal and intrapersonal influences

Intrapersonal factors such as personal experience and interpersonal influences from friends and family, relations, mass media, peer or support group, and voluntary organizations are important cues to action and could affect self-efficacy. The majority of the respondents reported that their own experiences and their interactions with health professionals helped them to continue breastfeeding or helped them least. Other influences included family members and friends, the mother-in-law and other relatives. Most women further reported that their own experiences influenced them to stop breastfeeding (Table 5.19). Personal experience and health care professionals thus have an important influence on most women either to continue or to stop breastfeeding.

6.4.6 Feeding outside the home

In this study, confidence to breastfeed was assessed by women's ability to breastfeed in a public place without feeling uncomfortable; however, this may depend on societal perceptions about breastfeeding.

The question that asked respondents whether they had ever breastfed in a public place, enjoyed a response rate of 89.4% (n=682). More than three quarters (89% n=607) of the respondents reported that they had breastfed in a public place (Figure 5.19), which indicates lower rate of breastfeeding outside the home. If women do not wish to breastfeed their infants in a public place— or are uncomfortable or fearful when doing so – it is very likely that they will not practice feeding on demand. It was previously established that women tended to return to work within the first three months after delivery. It can therefore be deduced that, if they do not feed outside the home, the chances of suboptimal feeding are high.

A large percentage of women responded to the question whether they had experienced any problems breastfeeding their babies in a public place (87.8%, n=670). About one fifth (18.8% n=126) reported that they had ever had a problem finding a place to breastfeed their infants in a public place (Table 5.20).

When the participants were asked if they had ever been stopped breastfeeding their infants in a public place, 683 responses were received. One third of them (24.6% n=168) reported that they had been stopped or that they felt uncomfortable about breastfeeding in a public place (Table 5.20). Findings from the Irish study reported that more than half of the respondents had fed their babies in a public place (Begley et al, 2008). The proportion of women who had done so

in this setting is higher. A woman who finds it difficult or uncomfortable to breastfeed in a public place, or who was once stopped breastfeeding in a public place, may find it difficult to breastfeed her baby on demand, whenever she is in a public place. Chi-squared analysis shows that the proportion of women who breastfed on demand is definitely higher among those who were never stopped or made to feel uncomfortable about doing so. This implies that feeling uncomfortable feeding in public reduces women's confidence to feed outside the home, which no doubt reduces the frequency of breastfeeding. Societal factors that may reduce self-efficacy exist in this setting.

The relationship between problems with feeding in a public place and feeding frequency is statistically significant ($P < 0.001$). This is consistent with the finding of Jager (2012). Women who have overcome all these barriers may have the confidence to breastfeed anywhere because confidence enhances the ability to breastfeed (Meedy, Fahy and Kable, 2010). A woman can build her confidence from the support she receives in the hospital during antenatal care, and from friends and family.

6.4.7 Support for breastfeeding

This subsection investigates if women are encouraged to engage in skin-to-skin contact with their babies as soon as possible after delivery. It also looks at the assistance mothers receive with regard to breastfeeding in the early days after delivery, and at the assistance they receive to help them overcome problems in the early days. The section also discusses whether home visits by health professionals occur, and what information about support services is made available to mothers.

6.4.7.1 Skin-to-skin contact after birth

Breastfeeding support in the postnatal period helps in the early initiation of feeding. This is one of the key elements of the BFHI. Skin-to-skin contact immediately after birth has been recommended because it enhances the prompt initiation of breastfeeding. Just over half (52.1%, $n=674$) of the participants reported that they had skin-to-skin contact with their baby immediately after delivery (Table 5.22). Such early skin-to-skin contact immediately after delivery plays a positive role in enhancing the success of breastfeeding (UNICEF, 2013). However, our figure for women having skin-to-skin contact after delivery is lower than what was reported by the CDC (2013). Place of delivery and practices of encouraging skin-to-skin contact immediately after delivery have an impact on breastfeeding practices. Women who reported having skin-to-skin contact with their babies were mostly supported by nurses, with

other support coming from family and friends, doctors, and nursing and medical students. Most of them left once the baby was feeding, though they did also return to check on them. Most of the respondents found the information (regarding the importance of skin-to-skin contact with their newborn infants) extremely useful or very useful. In fact, such contact was likely to have motivated women to breastfeed, and was reflected in breastfeeding at birth and discharge. Skin-to-skin contact was significantly related to the duration of feeding but not to the frequency of feeding, as expected. In other words, women who engaged in early skin-to-skin contact with their newborn infants tended to initiate breastfeeding far sooner, i.e. within 30 minutes after delivery, as recommended, and they tended to breastfeed them for longer, i.e. for more than six months after birth.

6.4.7.2 Assistance with breastfeeding in the early days

Most women (46%, n=255) reported that they did not receive any assistance with the initiation of breastfeeding after the birth of their previous child (Figure 5.20). However, 34.5% (n=192) reported that despite this they felt supported adequately, because the person who supported them (e.g. a nurse or a doctor in the hospital setting, or a family member or friend in the case of home deliveries) left once the baby was feeding, but came back to check on them. The vast majority found this help useful to them and comforting (Figure 5.21).

6.4.7.3 Assistance to overcome problems in the early days

Although most women reported that they had no problems with breastfeeding in the early days, some women did report problems, such as nipple pain, delay in initiation or baby's refusal to suck. The few who did report problems were mostly assisted by nurses in the early days (Figure 5.22). Such problems could adversely affect breastfeeding, if they are not well handled, as they could lead women to develop a negative attitude towards breastfeeding. It was previously discussed that personal experiences with breastfeeding are an important interpersonal factor and influence on breastfeeding. Therefore helping women to overcome all related problems is a key aspect of protecting, promoting and supporting breastfeeding.

6.4.7.4 Home visit and information about support services

A little more than 10% of the respondents were visited by health care personnel when they returned home, with the majority being visited by nurses (Table 5.23). Most of the respondents reported that they were not given any information about support services after they had been discharged. However, the few who were informed about such services, found it easy to access them, even though some had been worried that the services might be inaccessible or difficult to

access (Figure 5.23). These support services are important in enhancing self-efficacy. Women, especially those who come in contact with hospitals, should be given adequate information about support services, and it would be advisable for government to expand the existing services for improved efficiency. In addition, the current follow-up and support services need to be evaluated, as this may go a long way to enhance self-efficacy and breastfeeding.

Support for breastfeeding and increased capacity to overcome challenges is important, but as the above findings illustrate, more needs to be done. The proportion of women who reported that they were not being supported when they needed help, or who were not visited after delivery, or who were not given information about support services is high, and this is likely to have a negative effect on breastfeeding practices.

6.4.8 Summary: Cues to action and self-efficacy

As suggested by the findings presented in the previous sub-sections, the cues to action and self-efficacy have a strong influence on the capacity to breastfeed. If women have access to correct information and if they receive effective mentorship and guidance, they will have the confidence to overcome any obstacles to successful breastfeeding. The preceding sub-sections discussed the feeding of infants in the study population was affected by various factors, such as the mother's experience with previous breastfeeding, the influence of family and friends, how the respondents themselves were fed when they were babies, the role played by marketing and advertising, the impact of various interpersonal factors, the ease and comfort of feeding their infants outside the home, and the availability of support services.

6.5 Breastfeeding Intentions of Pregnant Women in Plateau State

The intention to breastfeed is the necessary precursor to engaging in the practice. If women are well informed and supported during pregnancy, they are more likely to anticipate breastfeeding their newborn infants. This section discusses the findings relating to the questions that were asked about the participants' intention to breastfeed their previous child and their intention to breastfeed the baby they were expecting at the time of the study.

6.5.1 Prenatal breastfeeding intention with regard to previous child

It was reported earlier (see Section 6.3.1) that, when expecting mothers plan or anticipate that they will be breastfeeding their babies, such preparation during the prenatal period

significantly increases the likelihood that they will breastfeed their babies exclusively. The response rate with regard to the relevant questions was high (96.9%, n=739), with almost three-quarters of the respondents (73.5% n=543) indicating that they had intended to breastfeed during their previous pregnancy (Table 5.24). After delivery, more than three-quarters (91.8%) of the respondents did in fact start breastfeeding. This confirms the fact that most women, who, in the prenatal period, express the desire or intention to breastfeed, will do so once the baby is born. Women who had a clear pre-birth plan of how they would feed their babies were moreover 70% less likely to introduce other feeds within the first six months of life, than women who never had such a feeding plan ($P=0.001$). Furthermore, women who had a prenatal intention to breastfeed were 3.3 times more likely to breastfeed exclusively. These findings suggest that breastfeeding intention is a very strong determinant of breastfeeding in this population. Interventions that promote breastfeeding and that guide women towards taking the decision to breastfeed thus influence infant feeding in this population.

6.5.2 Breastfeeding intention with regard to current pregnancy

This section focuses on the breastfeeding intentions relating to the current pregnancy, i.e. whether the mother intends to breastfeed her baby once it has been born. Relevant factors discussed here are the intended duration of exclusive breastfeeding, and the intended duration of any breastfeeding.

6.5.2.1 Breastfeeding intention

The intention to carry out a particular action or to change a particular behaviour is an important determinant of that behaviour. With regard to the questions relating to breastfeeding intention, a response rate of 98.2% (n=749) was obtained. Most of the women desired to breastfeed the baby they were expecting. However, a reasonable proportion of women (20.4%, n=153) also desired to give their babies either infant formula or to mixed feed (Table 5.25). They mentioned the following reasons for anticipating that they would feed their babies in a particular way :they had been advised by the hospital to breastfeed their babies; they felt that breast milk was the best choice for their baby; they felt that the use of infant formula was more convenient than giving breast milk; they were fearful that they would not be able to cope with breastfeeding and thus wanted to include infant formula feeding too; they had certain health conditions, which precluded them from breastfeeding; or it was difficult to breastfeed their babies once they returned to work or to school. Women who said that they anticipated a particular feeding pattern because they had been advised accordingly in the hospital are mostly

going to anticipate breastfeeding because the hospital will not advise any woman to use infant formula or practice mixed feeding. With regard to the women who anticipated a particular feeding because she felt this was the best for her baby might have preferred breastfeeding if she had been made aware of its benefits; if she was not aware, though, she might have chosen mixed or formula feeding, because she was under the impression that this was the best. With regard to the other reasons cited above, it is likely that these referred to formula or mixed feeding; these can be considered as barriers to breastfeeding. Intention to breastfeed is the clearest indicator of actual breastfeeding practice because most women who intend to breastfeed in the prenatal period, actually do so after delivery (Chalmers et al, 2009; Jager et al, 2012; Mckee, Zayas, Jankowski, 2004). According to the Health Belief Model, certain factors motivate an individual to anticipate a change in health behaviour, and people who deliberately desire or intend to practice these behaviours, end up practising them (Hayden, 2009). Most of the women who participated in this study, expressed an intention to breastfeed, which coincides with the findings of others researchers who reported that most women will wish to breastfeed (Cabieses, Waiblinger, Santorelli, and McEachan, 2014; Donath et al, 2003; Haslam, Lawrence, and Haefeli, 2003).

6.5.2.2 Other factors that influence breastfeeding intention

In addition to some of the reasons advanced by women for the decision either to breastfeed or not to do so, the analysis presented in the previous chapter identified several other factors that had a significant association with breastfeeding intention.

Logistical regression revealed that single women are three times more likely to anticipate breastfeeding than married women ($p=0.011$). This is inconsistent with what was reported by Lee et al (2005) and Leuung et al (2003), who reported that married women were more likely to anticipate breastfeeding. Women who attended antenatal clinic in their previous pregnancy are also three times likely to anticipated breastfeeding than those who did not attend. This finding suggests that breastfeeding may improve, if more women attend antenatal care in Plateau State. Furthermore, women who know they were breastfed as babies are 1.6 times more likely to anticipate breastfeeding than those who did not know.

6.5.2.3 Intended duration of exclusive breastfeeding

A high response rate (95.8%, $n=731$) was obtained when participants were asked how long they intended to breastfeed exclusively. A mean duration of 5.9 months ($SD\pm 2.4$) was calculated (Table 5.26). The majority of the participants (79.5%) also intended to breastfeed

the baby they were currently carrying for at least five months after delivery. Most women intended to breastfeed their babies because they felt that this was the best for their children and because they had been advised to do so. Others replied that they wanted to use infant formula in addition to breastfeeding, because they either could not cope with breastfeeding or because the other options were more convenient.

6.5.2.4 Intended overall duration of breastfeeding

The response rate with regard to the intended overall duration of breastfeeding was 97% (n=740). The women also desired to breastfeed exclusively for relatively long periods (16 months, SD±4). Most women (81.2%) planned to breastfeed for a minimum of 13 months.

6.5.3 Summary: Breastfeeding intentions of pregnant women in Plateau State

It can be seen from the foregoing discussion that most of the women participating in this study planned to breastfeed their babies; moreover, they planned to breastfeed exclusively for a reasonably long period of time. Knowledge about how they had been fed as a baby, what their marital status was, and whether they had attended antenatal care were all determinants of breastfeeding intention in this setting.

6.6 Personal Perceptions

Personal perceptions influence a person's beliefs and determine their health behaviour. This section thus looks at the findings around the perceived seriousness and susceptibility, the perceived barriers to breastfeeding, and the perceived benefits of breastfeeding.

6.6.1 Perceived seriousness and susceptibility

The factor of perceived seriousness in this study relates to the expecting mother's perception of the severity of health problems her child may suffer if it is not breastfed optimally; perceived susceptibility refers to the expecting mother's perception of the degree to which her infant will be exposed to diseases if it is not breastfed optimally. These constructs, which are based on the Health Belief Model, set out in Chapter two are not very pronounced in this study, but they are nonetheless relevant.

Women's responses regarding why they had chosen to feed their infants in a certain way (whether breast milk, formula feed or mixed feed) indicated that they were aware that their

children might be more susceptible to diseases if they were not breastfed as advised. Their responses, both with regard to the particular choice of feed they preferred and to the particular duration of feeding, revealed that they were indeed influenced by, firstly, what they thought would be the best for their baby and, secondly, by the information they received from the hospital. In other words, if a woman decides to carry out a particular health action (in this case, to breastfeed her baby exclusively) because she feels that this is the best for her baby's health, this decision could mean that she is aware of the seriousness of not carrying out this action as well as being aware of how susceptible she or her baby might be, if she did not carry out the action. Their decisions, if influenced by the information they received from the hospital, may have also been prompted by the seriousness of what might happen to their babies, if they did not breastfeed them. These findings demonstrate the impact of the hospital and of health workers on breastfeeding, and they are consistent with Li et al (2004) who too identified the important influence of health worker and hospital policy on breastfeeding. However, some of the women in this study population chose to give either mixed feeds or formula to their babies, either for convenience or because they could not cope with breastfeeding. This group of women might not have appreciated how susceptible their children could be to diseases, as a result of not being breastfed. It is thus valid to conclude that the prevalence of infant feeding in Plateau State is influenced by the information women receive from the hospital about the risks of not breastfeeding their infants, and the knowledge they have about the importance of breastfeeding.

6.6.2 Perceived barriers to breastfeeding

As discussed earlier in this chapter (see Section 6.3) women do occasionally experience challenges with breastfeeding, and these problems can affect their level of self-efficacy. In this study, most women reported that they only had problems with breastfeeding in the early days (Figure 5.25). They reported that they had medical conditions, that initiation of breastfeeding had been delayed, that the baby refused to suck, and that they had nipple pain in the early days (Figure 5.26). General problems with breastfeeding that persisted beyond the early days included mastitis, thrush and nipple pain (Figure 5.27). Few women had problems when they started breastfeeding; more developed problems after breastfeeding for a while. For example, 133 women reported experiencing nipple pain in the early days, whereas this figure had increased to 313 later in the breastfeeding period; this represents a 135% increase in the proportion of women who experienced nipple pain. Depending on the intensity of the pain

experienced during breastfeeding, this may affect the frequency and success of breastfeeding. These problems also reduce self-efficacy (Denis, 1999).

This construct (*viz.* perceived barriers) is a strong determinant of action or behaviour, as it is the perceived cost of such action or behaviour. It is an individual's own evaluation of the obstacles that stand in the way of him or her adopting a new behaviour (Hayden, 2009). An individual's ability to overcome these barriers depends on his self-efficacy and motivation and on the support he or she receives to carry out the action. In this study, some of the barriers to breastfeeding mentioned by the participants were inability to cope with breastfeeding, most likely due to stress; advice to feed their baby something other than breast milk; health problems, which may include HIV, breast cancer, or other illnesses; inadequate breast milk production; the baby's refusal to suck or nurse; unplanned pregnancies shortly after delivering the previous baby; delay in initiation of breastfeeding; nipple pain or similar health issues; and lack of time due to the mother needing to return to work or school. These findings are consistent with

However, if women are assisted or supported to overcome these barriers, they are more likely to breastfeed appropriately. Some women stopped breastfeeding because they were pregnant and believed that it was wrong to breastfeed while pregnant.

6.6.3 Perceived benefits and knowledge around breastfeeding

It has been found that women are likely to breastfeed if they are aware of the benefits of doing so, or if the benefits outweigh the barriers or costs of action.

This study revealed that most of the pregnant women attended antenatal classes, where feeding their babies was discussed. The health benefits of breastfeeding were thus explained to the majority of these women when they attended classes at the hospital. Other women received information about the benefits of breastfeeding from the media, and from family and friends (Table 5.27). Some of the benefits of breastfeeding reported by respondents were that breastfeeding promotes growth and development, that it prevents illness, promotes the mother's health, and is cheap and available (Table 5.28). Being aware of these benefits would strongly drive a woman to breastfeed. Some of the benefits of infant formula that were mentioned by the respondents were that it was a good source of nutrition, that it made the baby strong and healthy, and that it was the best option for them in the absence of the mother (Figure 5.28). This finding suggests that some women introduced their babies to infant formula

because breastfeeding was a problem or because they perceived that they had less capacity to breastfeed.

It is assumed that having knowledge about the benefits of breastfeeding will enhance the desire to breastfeed. Thus, discussing infant feeding with women during antenatal care visits, with an emphasis on early initiation of breastfeeding and the benefits of breastfeeding, will significantly improve the prevalence of breastfeeding in Plateau State.

6.6.4 Summary: Personal perceptions

As seen above, respondents expressed their views on the perceived susceptibility of their babies to disease and the seriousness of the problems their child might encounter if not breastfeed adequately. For instance, one of the mothers said that she loves to breastfeed her baby as advised, because she knows that this is the best for her baby. This implies that she is probably aware that not feeding optimally could negatively affect her baby. Other women said that they chose a different feeding pattern (involving formula or mixed feeding), because this was convenient for them, or because they could not cope with breastfeeding. This indicates that, although most women seem to have a positive perception about breastfeeding, a few are yet to accept breastfeeding as recommended by the WHO and other organisations. The potential risks of susceptibility to disease and disability associated with suboptimal feeding could be explained during health talks when expecting mothers visit the clinic or hospital for antenatal classes, and during mass media campaigns. At the same time, they could be educated about the benefits of breastfeeding. Participants have also demonstrated the existence of several barriers to optimal breastfeeding, and supporting women to overcome these barriers is also likely to increase the prevalence of breastfeeding.

Personal perception of breastfeeding is a determinant of infant feeding in this setting and can be made positive, if the benefits of breastfeeding are greater than the cost of breastfeeding.

6.7 Summary of the Chapter

Guided by the Health Belief Model, and structured according to its main constructs, the findings were presented, starting with the health behaviour (Section 6.1), the modifying factors (Section 6.2), and the cues to action and self-efficacy (Section 6.3), before discussing the breastfeeding intentions of the pregnant women in relation to their expected baby (Section 6.4), and concluding with their personal perceptions with regard to the challenges and benefits of breastfeeding (Section 6.5).

6.7.1 Infant feeding practices

The results with regard to the participants' infant feeding practices, as pertaining to the delivery of their previous baby, show that about one third of participants initiated feeding within 30 minutes after birth, with a little more than half subsequently continuing to feed on demand. Most women gave breast milk only for the first feed, although a small number engaged in prelacteal feeding. The majority of the respondents were breastfeeding their babies when they were discharged from the hospital, or 48 hours after birth in the case of women who delivered their babies at home. Most of these women breastfed their babies for at least 13 months (the mean is 15 months SD ± 4), and a third of them indicated that they had wanted to breastfeed for longer, but could not do so for various reasons.

6.7.2 Exclusive breastfeeding rate

The results obtained with regard to the exclusive breastfeeding rate showed that about 40% of children were likely to be exclusively breastfed for 6 months in Plateau State, and that exclusive breastfeeding decreased with increasing infant age. Factors like health conditions, inadequate milk production, interpersonal influence, the baby's refusal to suck, and inadequate breastfeeding support have been identified as potentially influencing– and lowering – the exclusive breastfeeding rate.

6.7.3 Participant profiles

An analysis of the participants' socio-demographic profile revealed that few of the participating women were younger than 20 years; most of the participants were in their second trimester. There was a high level of formal education, which was associated with maternal age and parity. The fertility rate was lower than the state and national estimates (2.4 ± 1.6 children). Prevalence of single motherhood was 10.2%. A high literacy level in the study population translated into a high rate of employment. The relationship between education and employment was statistically significant. Average monthly family income was low. This implies that the findings from this study were not from a particular limited group of women but from a heterogeneous population. This helps to enhance the external validity of the results.

6.7.4 Factors that influence infant feeding

Numerous factors were identified that could potentially influence infant feeding in the study population. These include modifying factors such as socio-demographic variables, antenatal care, place of delivery, type of delivery, and use of pain relief during labour. They also include

cues to action and self-efficacy, such as previous breastfeeding experience, influence of family and friends, interpersonal factors, knowledge of how an individual was fed as a baby, the role of marketing and advertising in the media, the ease of feeding outside the home, the nature of support received for breastfeeding, and personal perceptions of breastfeeding.

6.7.5 Breastfeeding intention

Most of the mothers interviewed in this study declared that they intended to breastfeed their coming baby, and as we have seen herein, such an intention is a strong determinant of breastfeeding.

6.8 Implication of findings

This section presents implications finding practice and research.

6.8.1 Implication of findings for Practice

The fact that some women still practice prelacteal feeding implies that midwives and nurses in Plateau State should place a greater emphasis on the importance of breastfeeding as soon as possible after delivery, and assist women to do so.

The study also demonstrated that a reasonable proportion of women practiced mixed feeding in the early days. This implice that nurses and midwives need to pay more attention to discouraging mixed feeding in the early days, by seeking to understand why women do this and how they may be assisted to breastfeed exclusively.

Exclusive breastfeeding rate was reasonable when compared with the national estimate; however there was a steady decline in the proportion of women that practiced exclusive breastfeeding as infant age increases. The implication of this finding for nursing practice is that women need to be given the necessary support to breastfeed exclusively their babies, as recommended by the BFHI. Support for breastfeeding should be provided throughout the breastfeeding period.

Older maternal age was negatively associated with early initiation of feeding, while younger maternal was associated with short duration of total breastfeeding. Therefore it is imperative to support older women after delivery to initiate breastfeeding early and to encourage younger women to breastfeed for longer than one year, preferably up to the recommended period of two years.

One of the problems women had in the early days was Nipple pain which suggest that the women have not receive adequate education and support in this critical aspect of feeding. It also means that the baby is less likely to be successful at sucking because of inadequate pressure on the milk sacs, this compounding the problem of “failed’ breastfeeding experiences.

Several factors have been identified to influence infant feeding in this setting, therefore health workers needs to be informed so as to consider these factor when planning antenatal care.

6.8.2 Implication of findings for research

Finding from the current studies will give future researcher direction about infant feeding in Plateau State and will also informed future interventions that will be geared towards ensuring that breastfeeding in promoted, protected and supported.

6.9 Strengths and Limitations of the Study

6.9.1 Strengths of the study

The heterogeneity of the sample (cut across various sociodemographic characteristics) and the fact that participants were almost equally drawn from the three senatorial is a good strength of the study. This implies wider generalisability.

Strength lies with the instrument validation and translation. This is the first study to translated an infant feeding questionnaire to a Nigeria language in general and to Hausa in Particular. This helped women that didn’t understand English or that could not express themselves in English, to do so in the local language. The translated instrument will be useful for future researchers in Northern Nigeria.

6.9.2 Limitations of the Study

The following limitations were identified in relation to this study:

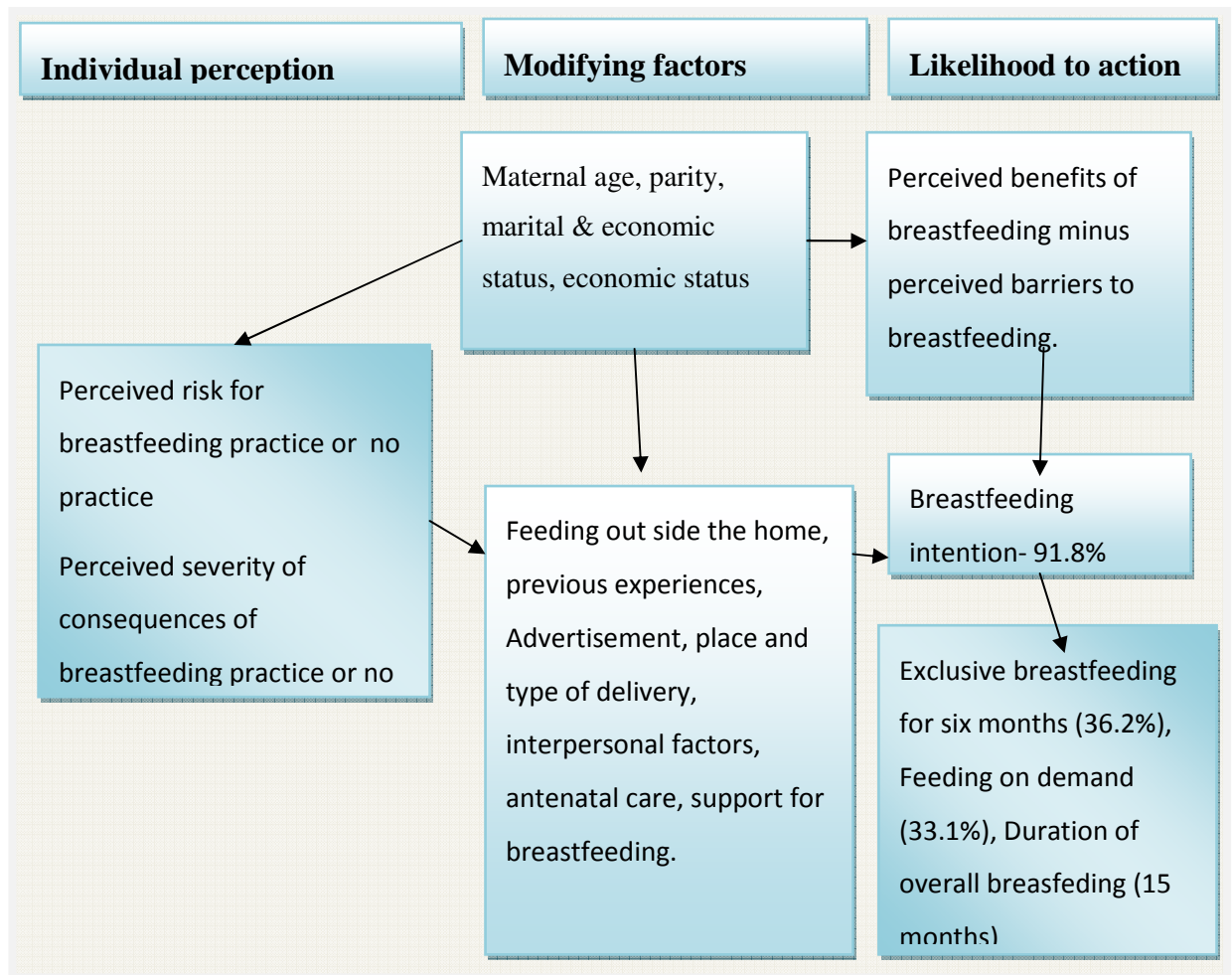
- Most of them complained that the questionnaire was too long and so they were allowed to take it home and this contributed to the lower response rate.
- The relative high proportion of non-response to some of the items might be related to the fact that there were so many questions asked. The items that made up the questionnaire used for this study had been adopted from a prospective study that was implemented in three phases (said study was set in Ireland in 2008; however, the current study was a descriptive study involving a one-time retrieval of information.

The prevalence of non-responses unfortunately affected some of the analyses of infant feeding practices, which had some potential independent variables.

- This study retrieved information about infant feeding between birth and about 2 years of life. The inclusion criteria required the participants of this study to have had a baby, which must have lived for at least 24 hours. It is possible that some women had lost their infants after the first day and thus had not been able to provide information about questions relating to infant feeding after this period. This might have contributed to the some of the non-responses to questions about infant feeding in the later periods.
- Recall bias is also possible because of the period of recall required (2-3year).
- The instrument used for data collection did not allow the respondents to elaborate on some of their answers. For instance, some of the women mentioned that they had used water to relieve pain during delivery, or they said that their baby was not feeding at discharge. In situations like these, there was no room for further probing or investigation of how water would work as a pain killer or what it meant for a baby not to be feeding at discharge. The Irish study was a mixed method study, and as such, much of these issues were clarified during the qualitative section of that study. However, this was not the case in the current study.
- It may not be possible to generalise the findings of this study to all the women in Plateau State, because it was conducted among women who were pregnant and who must have had at least one previous child. The findings may differ in the case of women who are not currently pregnant, and in the case of those who were first-time mothers and had thus never delivered a baby before. The findings reported herein can only be valid for pregnant women who have had at least one previous child.
- The findings may furthermore be different if the study had been conducted among women who attended antenatal clinics at private hospitals.[rather than at government / public hospitals.
- Different results might have been obtained, if the study had been conducted in the community itself.
- The responses were not clear about the specific health reasons that had resulted in the cessation of breastfeeding and the instrument did not accommodate such responses.
- Some women reported that water was used to relieve pain during labour. It was not clear, however, whether these women were referring to drinking water orally or whether they were referring to intravenous infusion. The questionnaire did not provide an opportunity for women to explain how they used water as a pain relieving agent

during labour. The Irish study (Becley 2008), on which was the questionnaire used herein was based, had also not provided a detailed explanation of how water had worked for women, but it did report that the use of pain relief did not affect breastfeeding

Figure 6.1: The Health Belief Model showing infant breastfeeding rates and determinants of infant feeding in Plateau State.



Chapter Seven: Summary, Recommendations and Conclusion.

7.0 Introduction

This chapter presents the conclusions, drawn from the findings of the study, which were discussed in detail in the previous chapter. In addition, recommendations are made to health workers, government and the community, and various areas that would benefit from future research are also highlighted.

7.1 Summary

The aim of this study was to identify the determinants of infant feeding in Plateau State. To answer this question, five objectives were outlined, namely: 1. To describe the profile of participants; 2. To determine the rate of exclusive breastfeeding in the study population; 3. To determine the infant feeding practices of the study population; 4. To determine the mother's breastfeeding intention of her new infant, following the delivery of the baby from the current pregnancy; and 5. To identify the factors that might influence infant feeding. A hypothesis was formulated to help in identifying the determinants of infant feeding (see chapter one).

The dearth of current literature in the field of infant feeding practices in Plateau State of Nigeria prompted this study. The study was thus conducted to investigate the current infant feeding practices in Plateau State and to identify the factors that might be influencing these practices, with a view to providing base line information to facilitate the future planning of interventions to promote breastfeeding. Prior to this study being conducted, no comprehensive data was available with regard to infant feeding practices in Plateau State. There was no current information about exclusive breastfeeding rates, timely initiation of feeding, frequency of feeding, prelacteal feeding, and overall duration of breastfeeding in the state. There was also no information about the determinants of infant feeding in the state. A few studies had looked at breastfeeding rates in the southern region of the country, and these were able to provide information about determinants of infant feeding, exclusive breastfeeding and initiation of breastfeeding.. This study thus successfully bridged the existing knowledge gap with regard to breastfeeding in Plateau State.

Identifying and describing the determinants of infant feeding practices necessitated a model that would simplify the complex relationships between these determinants and infant feeding practices. The Health Belief Model (presented in Chapter two of this report) was successfully used to describe the infant feeding practices of women in the study setting in a systematic way. The following conclusions are presented according to the objectives of the study.

7.1.1 Profile of participants

An analysis of the socio-demographic characteristics of the respondents revealed that the women were almost equally distributed across the three senatorial zones of the state; they were also almost equally recruited across primary and secondary facilities.

The maternal level of education was found to be higher than had been estimated in the current national demographic and health survey. A third of the respondents (33%) reported that they had attended tertiary education institutions. The national health survey, in contrast, estimated that only 10% had been educated to tertiary level.

The parity of the respondents indicated that the women had between 1 to 4 children (2.4, $SD \pm 1.6$), which is lower than the national estimate of 5.5 (NPC, 2013).

With regard to employment, about half of women the women in the study were employed; this is a higher rate than the state estimate, viz. only 37.4% of women are employed (Plateau State Government, 2009).

Most participants were married and were in the second trimester of their pregnancy. The mean age of the participants was 27 years ($SD \pm 5.2$), while the average monthly income of families was N29,109 ($SD \pm 5395$) (179.4USD, $SD \pm 33.2$).

The results revealed that the respondents came from a heterogeneous population, cutting across various socio-demographic characteristics, which enhances the external validity of the results.

7.1.2 Exclusive breastfeeding rate

It has been reported that breastfeeding is universal in Nigeria (NPC, 2013); this is not an unusual finding because breastfeeding is a natural and normal way of feeding infants. Over the years, moreover, research has identified and confirmed the best way of breastfeeding for the optimal benefit of the child. It is now recommended that children should be exclusively breastfed for 6 months, followed by the introduction of a weaning diet and further breastfeeding until 2 years of age (UNICEF, 2005). In order to promote, protect and support

breastfeeding, the BFHI was launched in the 1990s; it guides countries in carrying out this mission.

The rate of exclusive breastfeeding for six months in Plateau State was higher than the national estimate, indicating good breastfeeding status although the rate was still lower than the global estimate for developing countries . Four out of ten women exclusively breastfed their children for the first six months; thereafter, exclusive breastfeeding declined with increasing infant age, with an increase in mixed feeding within the same period. In the case of HIV-positive mothers, mixed feeding is risky and not advised , as it places the children in danger. Apart from the risk of HIV transmission, children who are given mixed feeds are more likely to be susceptible to diseases like diarrhoea and pneumonia, thus increasing infant mortality (UNICEF, 2013).

This study identified various factors that influenced the rate of exclusive breastfeeding in this setting; these factors include health conditions of the mother and the infant, inadequate milk production, interpersonal influence, the baby's refusal to suck, and inadequate breastfeeding support for nursing mothers.

7.1.3 Infant feeding practices

In this section, the conclusions related to the timely initiation of breastfeeding, the frequency of breastfeeding, the rate of feeding on demand, the use of prelacteal feeding and the overall duration of breastfeeding are presented.

7.1.3.1 Timely initiation of breastfeeding and frequency of feeding

Timely initiation of breastfeeding could save the lives of many children (Edmond, Zadoh, Quigley, Amenga-Etego, Owusu-Agyei and Kirkwood, 2006). It is recommended that all women should establish breastfeeding within 30 minutes of delivery (UNICEF, 2005). In this study, most of the women had initiated breastfeeding within the first hour of delivery, but a smaller number had initiated it within the first half hour. Although feeding on demand was widely practiced, a reasonable (19.5%) proportion reported that they did not practice it.

7.1.3.2 Prelacteal feeding

Prelacteal feeding was prevalent in the study population. This could potentially affect the early initiation of breastfeeding. Since breastfeeding is a physiological process, prelacteal feeding may slow down the initiation process.

7.1.3.3 Overall duration of breastfeeding

Duration of breastfeeding was high and some women stated that they would have liked to breastfeed for a longer period.

7.1.4 Breastfeeding intention

A significant majority of the participants intended breastfeeding their current baby once it was born. Women planned to exclusively breastfeed the baby they were currently pregnant with, for a mean duration of 5.9 months ($SD \pm 2.4$) and to breastfeed for an overall duration of 16 months ($SD \pm 4$). Factors such as knowledge about how the respondents had been fed as a baby, their marital status, and their attendance at antenatal care facilities are potential determinants of breastfeeding intention in this setting.

7.1.5 Factors that influence infant feeding

Factors that influence infant feeding in this study include the following: maternal age, employment, parity, marital status, economic status of the family, antenatal care, and place of delivery, type of delivery, and use of pain relief. The educational level of mother was not a determinant of infant feeding herein. The stated hypothesis that social, demographic and economic factors influence infant feeding practices in Plateau State stands and remains valid.

Other factors that influence infant feeding were previous breastfeeding experience, marketing and advertisement of breastfeeding and infant formula, family and friends, interpersonal and intrapersonal factors, breastfeeding problems, health conditions, unwanted pregnancies, delayed initiation of breastfeeding, breastfeeding support, breastfeeding confidence and prenatal breastfeeding intention. Personal perceptions, such as personal evaluation of potential problems associated with suboptimal breastfeeding, barriers such as inadequate milk production and health challenges, and perceived benefits, are also important factors that influence infant feeding in Plateau State.

7.2 Recommendations

Based on the above conclusions, the following recommendations to health workers, government, and the community were made. In addition, recommendations were made for further studies in this field.

7.2.1 Recommendations to health workers

- Breastfeeding support should be sustained throughout the period of breastfeeding. This is necessary because the breastfeeding rate decreases with increasing infant age.
- The first experiences with breastfeeding are a critical determinant of subsequent experiences with breastfeeding; therefore, first-time mothers should be adequately supported to by health care workers to develop a positive attitude towards breastfeeding.
- The rate of exclusive breastfeeding in Plateau State can improve, if women are well informed and guided during antenatal visits to make the conscious decision that they will be breastfeeding their babies when they are born.
- Adequate communication of the health benefits of breastfeeding is very likely to increase the duration of exclusive breastfeeding.
- Instituting an efficient follow-up program that will assist women after they have been discharged may improve breastfeeding practices in this setting.
- There should be prompt treatment and management of health conditions that can affect breastfeeding.
- There should be good quality lactation education and support needs. This will help women in overcoming challenges associated with breastfeeding.

7.2.2 Recommendations to government

- An improvement in the socioeconomic status of Nigerian women would help improve breastfeeding practices, because higher economic status was associated with timely initiation of breastfeeding and exclusive breastfeeding for six months.
- Breastfeeding may improve if government and/or employers provide a place at work where women can breastfeed their babies in privacy.
- Breastfeeding education during antenatal sessions and increased awareness by means of the mass media may be impactful in this setting.
- Advertisements about breastfeeding in Plateau State should focus specifically on the timely initiation of breastfeeding and on improving the duration of total breastfeeding.
- Some women reported that they had been stopped breastfeeding or made to feel uncomfortable breastfeeding in a public place. Sensitization about breastfeeding generally is necessary in order to correct any wrong impression the society may have about women breastfeeding in a public place.

- Interventions to promote breastfeeding that guide women towards deciding to breastfeed their infants will have a positive impact on infant feeding in this population.
- Such interventions, especially among HIV-positive women, should focus on discouraging mixed feeding.
- Additional support is needed for breastfeeding mothers in the workplace, by providing breastfeeding facilities and allowing breaks for women to breastfeed, as well as encouraging them to breastfeed for longer.
- Employees in Plateau State should be encouraged to adhere to the maternity leave that every woman is entitled to and women should be encouraged to dedicate the time to care for their children.
- Mothers in Plateau State should be encouraged to go to work with their babies after the period of maternity leave elapses, and employers should be encouraged to provide them with breastfeeding facilities at their places of work, in order to reduce the prolonged separation of infants from their mothers.
- Family planning services should be provided to all women attending postnatal clinics.
- A study to identify the cultural practices that act as barriers to early breastfeeding is necessary for the drafting of future interventions promoting breastfeeding.
- A more effective breastfeeding promotion strategy that focuses on problem solving is likely to increase the rate of exclusive breastfeeding in Plateau State.
- It is necessary to evaluate family planning services in Plateau State.

7.2.3 Recommendations to the community

- Family and friends were found to have a significant impact on infant feeding choices in this setting. Women who have successfully breastfed their babies should be encouraged by health workers to share their success stories with other women in the community.
- Community leaders should establish breastfeeding support centres to assist women who may require help with breastfeeding.
- Antenatal attendance and delivery in the hospital conferred advantages on the women in this study, by educating them about the benefits of breastfeeding their newborn infants; moreover, they were guided to anticipate breastfeeding their babies as soon as possible after delivery. Therefore, community leaders should encourage all women to visit antenatal care clinics and to deliver their babies in the hospital.

7.2.4 Recommendations for further studies

- Similar studies could be conducted among non-pregnant women and/or first-time mothers.
- Similar studies could be conducted among women attending antenatal clinics at private hospitals.
- A study to assess myths about breastfeeding with a view to developing a problem solving oriented support program thereafter will be beneficial for this group.
- An intervention study should be conducted to evaluate the efficacy of an antenatal breastfeeding information program on infant feeding practices.
- The current breastfeeding support services in the state need to be reassessed.
- A study to assess breastfeeding facilities at the work place in Plateau State may help in understanding why breastfeeding practices among working women are poor, despite the availability of breastfeeding facilities.
- There is a need for further assessment of the prevalence of health conditions that may affect breastfeeding, with a view to promoting healthful and optimal infant feeding.
- A study to identify the impact of a workplace breastfeeding support program in the state as a way of identifying how breastfeeding can be enhanced among employed women will be helpful.
- An evidence based intervention program should be developed based on this finding, and tested through a cluster randomized control trial, so as to design the most effective and efficient way of improving breastfeeding practice in Plateau State.

7.3 Conclusion

This study has collected and presented valuable information about infant feeding practices in Plateau State Nigeria, and has identified factors that can influence infant feeding. This study also highlighted that, although breastfeeding is universal in Plateau state, exclusive breastfeeding is not widely practiced. A lot needs to be done towards ensuring that breastfeeding is protected and supported. This study has established a baseline that will be helpful in planning effective breastfeeding programs in Plateau State.

References

- Abiona, T.C., Onayade, A.A., Ijadunola, K.T., Obiajunwa, P.O., Aina, O.I. & Thairu, L.N. 2006. Acceptability, feasibility and affordability of infant feeding options for HIV-infected women: a qualitative study in south-west Nigeria. *Maternal & Child Nutrition*. 2(3): 135-144.
- Aborigo, R.A., Moyer, C.A., Rominski, S., Adongo, P., Williams, J., Logonia, G., Affah, G., Hodgson, A. et al. 2012. Infant nutrition in the first seven days of life in rural northern Ghana. *BMC Pregnancy and Childbirth*. 12(1): 76DOI:10.1186/1471-2393-12-76
- Adejuyigbe, E., Orji, E., Onayade, A., Makinde, N. & Anyabolu, H. 2008. Infant feeding intentions and practices of HIV-positive mothers in southwestern Nigeria. *Journal of Human Lactation: Official Journal of International Lactation Consultant Association*. 24(3): 303-310. DOI: 10.1177/0890334408317765 [doi].
- Adelekan, D.A. 2003. Childhood nutrition and malnutrition in Nigeria. *Nutrition*. 19(2): 179-181.
- Adetunji, J.A. 1995. Infant mortality and mother's education in Ondo State, Nigeria. *Social Science & Medicine*. 40(2): 253-263.
- Adeyemi, O.A. & Oyewole, O.E. 2014. How can we really improve childcare practices in Nigeria? *Health Promotion International*. 29(2): 369-377. DOI:10.1093/heapro/das065.
- Afrose, L., Banu, B., Ahmed, K.R. & Khanom, K. 2012. Factors associated with knowledge about breastfeeding among female garment workers in Dhaka city. *WHO South-East Asia Journal of Public Health* 2012; 1(3):249-255
- Agho, K.E., Dibley, M.J., Odiase, J.I. & Ogbonmwan, S.M. 2009. Determinants of exclusive breastfeeding in Nigeria. *BMC Pregnancy and Childbirth*. 11(1): 22-26.
- Ahmed, A.H. 2008. Breastfeeding preterm infants: an educational program to support mothers of preterm infants in Cairo, Egypt. *Pediatric Nursing*. 34(2): 125-30, 138.
- Ajayi A.D, Hellandendu, J., Garba, S.N., Oyedele E.A, Anyebe E.E & Sani, D.K. 2011. Factors associated with the practice of exclusive breastfeeding among mothers in Kogi state, Nigeria. . *Nursing and Midwifery Council of Nigeria Research Journal*. 1(1): 20-23.

- Ajibade, B., Okunlade, J., Makinde, O., Amoo, P. & Adeyemo, M. 2013. Factors influencing the practice of exclusive breastfeeding in rural communities of Osun state, Nigeria. *European Journal of Business and Management*. 5(15): 49-53.
- Amatayakul, K., Wongsawasdi, L., Mangklabruks, A., Tansuhaj, A., Ruckphaopunt, S., Chiowanich, P., Woolridge, M.M., Drewett, R.F. et al. 1999. Effects of parity on breastfeeding: a study in the rural setting in northern Thailand. *Journal of Human Lactation: Official Journal of International Lactation Consultant Association*. 15(2): 121-124.
- Baker, J.L., Gamborg, M., Heitmann, B.L., Lissner, L., Sorensen, T.I. & Rasmussen, K.M. 2008. Breastfeeding reduces postpartum weight retention. *The American Journal of Clinical Nutrition*. 88(6): 1543-1551. DOI:10.3945/ajcn.2008.26379 [doi].
- Barros, A.J., Ronsmans, C., Axelson, H., Loaiza, E., Bertoldi, A.D., França, G.V., Bryce, J., Boerma, J. et al. 2012. Equity in maternal, newborn, and child health interventions in Countdown to 2015: a retrospective review of survey data from 54 countries. *The Lancet*. 379(9822): 1225-1233.
- Begley, C., Gallagher, L., Clark, M., Carroll, M. & Millar, S. 2008. *The national infant feeding survey*. Dublin: School of Nursing and Midwifery, Trinity College Dublin, University of Dublin.
- Betrán, A.P., Merialdi, M., Lauer, J.A., Bing-Shun, W., Thomas, J., Van Look, P. & Wagner, M. 2007. Rates of caesarean section: analysis of global, regional and national estimates. *Paediatric and Perinatal Epidemiology*. 21(2): 98-113.
- Black, RE, Morris, SS and Bryce 2008. Where and why are 10 million children dying every year? *Lancet*. 361:2226-2234.
- Blyth, R.J., Creedy, D.K., Dennis, C.L., Moyle, W., Pratt, J., De Vries, S.M. & Healy, G.N. 2004. Breastfeeding duration in an Australian population: the influence of modifiable antenatal factors. *Journal of Human Lactation: Official Journal of International Lactation Consultant Association*. 20(1): 30-38. DOI: 10.1177/0890334403261109.
- Bolton, T.A., Chow, T., Benton, P.A. & Olson, B.H. 2009. Characteristics associated with longer breastfeeding duration: an analysis of a peer counseling support program. *Journal of Human Lactation: Official Journal of International Lactation Consultant Association*. 25(1): 18-27. DOI: 10.1177/0890334408325985.

- Bono, ED & Pronzato, C. 2012. Does breastfeeding support at work help mothers and employers at the same time? Institute for social and economic research. Available at <http://hdl.handle.net/10419/65922> accessed 13/04/2014
- Brieger, W. 2006. *Health Belief Model, social learning theory. John Hopkins Bloomberg School of public health*. Available at: ocw.jhsph.edu/courses/socialbehavioralfoundations/lectureNotes.cfm [July 5th 2013].
- Brinks, P.J. & Wood, M.J. 1998. *Advanced design in nursing research*. Second ed. Thousand Oaks: SAGE Publications.
- Brodribb, W., Fallon, A., Jackson, C. & Hegney, D. 2008. The relationship between personal breastfeeding experience and the breastfeeding attitudes, knowledge, confidence and effectiveness of Australian GP registrars. *Maternal & Child Nutrition*. 4(4): 264-274.
- Brown, A., Raynor, P. & Lee, M. 2011. Young mothers who choose to breast feed: the importance of being part of a supportive breast-feeding community. *Midwifery*. 27(1): 53-59.
- Bula, A. (2009). *Knowledge, attitude and practice towards exclusive breastfeeding among HIV positive women in Lilongwe, Malawi*. MPH, Institute of public health, University of Copenhagen and school of health and related research, the University of Sheffield; 1-87.
- Burns, N. & Grove, S.K. 2007. *Understanding nursing research: building an evidence-based practice*. 4th ed. St. Louis, MO: Saunders/Elsevier.
- Butte, N.F., Lopez-Alarcon, M.G. & Garza, C. 2002. Nutrient adequacy of exclusive breastfeeding for the term infant during the first six months of life; World Health Organization, Geneva.
- Cabieses, B., Waiblinger, D., Santorelli, G. & McEachan, R.R. 2014. What factors explain pregnant women's feeding intentions in Bradford, England: A multi-methods, multi-ethnic study. *BMC Pregnancy and Childbirth*. 14(1): 50. DOI:10.1186/1471-2393-14-50
- Cai, X., Wardlaw, T. & Brown, D.W. 2012. Global trends in exclusive breastfeeding. *Int Breastfeed J*. 7(1): 12. DOI: :10.1186/1746-4358-7-12.
- Carlender, AK., Edman, G., Christensson, K., Andolf, E and Wiklund, I. 2010. Contact between mother child and partner and attitudes towards breastfeeding in relation to mode of delivery. *Sexual And Reproductive Health Care* 1(1): 27-34

- Centers for Disease Control and Prevention (CDC) Breastfeeding report card 2012. *United States: Outcome Indicators at* [Http://www.Cdc.gov/breastfeeding/data/reportcard2.Htm](http://www.Cdc.gov/breastfeeding/data/reportcard2.Htm).
- Central Bank of Nigeria 2014. *CBN exchange rates*. Central Bank of Nigeria.
- Centre for Community child Health 2006. *Breastfeeding promotion: practice resources*. <http://www.rch.org.au/ccch>. Accessed on 13 July 2013.
- Chalmers, B., Levitt, C., Heaman, M., O'Brien, B., Sauve, R. & Kaczorowski, J. 2009. Breastfeeding rates and hospital breastfeeding practices in Canada: a national survey of women. *Birth*. 36(2): 122-132.
- Charurat, M., Datong, P., Matawal, B., Ajene, A., Blattner, W. & Abimiku, A. 2009. Timing and determinants of mother-to-child transmission of HIV in Nigeria. *International Journal of Gynecology & Obstetrics*. 106(1): 8-13.
- Chezem, J., Friesen, C & Clarke, H. 2001. Source of infant feeding information used by pregnant women. *J. Perinatal Educ*; 10 (3): 20-26.
- Chuang, C., Chang, P., Chen, Y., Hsieh, W., Hurng, B., Lin, S. & Chen, P. 2010. Maternal return to work and breastfeeding: a population-based cohort study. *International Journal of Nursing Studies*. 47(4): 461-474.
- City Population. 2013. *Nigeria: Administrative division*. Available: <http://www.citypopulation.de/php/nigeria-admin.php> [21st November 2013].
- Community and Social Development Project. 2011. *Brief Profile on the home of peace and tourism*. Available: <http://www.csdpnigeria.org> retrieved on 21/05/2014. [21st May 2014].
- Coutsoudis, A., Pillay, K., Kuhn, L., Spooner, E., Tsai, W., Coovadia, H.M. & South African Vitamin A Study Group 2001. Method of feeding and transmission of HIV-1 from mothers to children by 15 months of age: prospective cohort study from Durban, South Africa. *Aids*. 15(3): 379-387.
- Davis, S.K., Stichler, J.F. & Poeltler, D.M. 2012. Increasing Exclusive Breastfeeding Rates in the Well-Baby Population. *Nursing for Women's Health*. 16(6): 460-470.
- Damato, EG., Dowling, DA., Standing, TS., & Schuster, SD. 2005. Explanation for cessation of breastfeeding in mothers of twins. *J.Hum.Lact*; 21 (3): 296-304.

- Damato, EG., Dowling, DA., Madigan, EA., & Thanatttherakul, C. 2005. Duration of breastfeeding for mothers of twins. *Clinical Research*; 34 (2): 201-209.
- Debes, AK., Kohli, A., Walker, N., Edward, K., Mullang, LC. 2013. Time to initiation of breastfeeding and neonatal mortality and morbidity: A systematic review. *BMC public health*; 13(3): 1-14
- Dennis, C.L. 1999. Theoretical underpinnings of breastfeeding confidence: a self-efficacy framework. *Journal of Human Lactation : Official Journal of International Lactation Consultant Association*. 15(3): 195-201.
- Desmond, C., Bland, R.M., Boyce, G., Coovadia, H.M., Coutsoodis, A., Rollins, N. & Newell, M. 2008. Scaling-up exclusive breastfeeding support programmes: the example of KwaZulu-Natal. *PLoS One*. 3(6): e2454.
- Dewey, K.G., Heinig, M.J. & Nommsen, L.A. 1993. Maternal weight-loss patterns during prolonged lactation. *The American Journal of Clinical Nutrition*. 58(2): 162-166.
- DiGirolamo, A.M., Grummer-Strawn, L.M. & Fein, S.B. 2008. Effect of maternity-care practices on breastfeeding. *Pediatrics*. 122 Suppl 2S43-9. DOI:10.1542/peds.2008-1315e [doi].
- Doherty, T., Chopra, M., Nkonki, L., Jackson, D. & Greiner, T. 2006. Effect of the HIV epidemic on infant feeding in South Africa:" When they see me coming with the tins they laugh at me". *Bulletin of the World Health Organization*. 84(2): 90-96.
- Doherty, T., Sanders, D., Jackson, D., Swanevelder, S., Lombard, C., Zembe, W., Chopra, M., Goga, A. et al. 2012. Early cessation of breastfeeding amongst women in South Africa: an area needing urgent attention to improve child health. *BMC Pediatrics*. 12(1): 105.
- Donath, S. & Amir, L.H. 2003. Relationship between prenatal infant feeding intention and initiation and duration of breastfeeding: a cohort study. *Acta Paediatrica*. 92(3): 352-356.
- Edmond, KM, Zadoh, C, Quigley, MA, Amenga-Etego, S, Owusu-Agyei, S., and Kirkwood, BR, 2006. Delayed breastfeeding initiation increase risk of neonatal mortality. . *Pediatrics*. 117380-386. DOI:Doi:10.15421/peds.2005-1496.
- Ekanem, I., Ekanem, A., Asuquo, A. & Eyo, V. 2012. Attitude of working mothers to exclusive breastfeeding in Calabar municipality, Cross River State, Nigeria. *Journal of Food Research*. 1(2): p71.

- Ekström, A., Widström, A. & Nissen, E. 2003. Breastfeeding support from partners and grandmothers: perceptions of Swedish women. *Birth*. 30(4): 261-266.
- Eregie, C.O. 1998. Studies on exclusive breastfeeding: a report on associated factors in an African population. *Journal of Tropical Pediatrics*. 44(3): 172-173.
- Essien, N., Samson-Akpan, P., Ndebbio, T. & John, M. 2009. Mothers' knowledge, attitudes, beliefs and practices concerning exclusive breastfeeding in Calabar, Nigeria. *Africa Journal of Nursing and Midwifery*. 11(1): 65-75.
- Fairbank, L., O'Meara, S., Renfrew, M.J., Woolridge, M., Sowden, A.J. & Lister-Sharp, D. 2000. A systematic review to evaluate the effectiveness of interventions to promote the initiation of breastfeeding. *Health Technology Assessment (Winchester, England)*. 4(25): 1-171.
- Federal Ministry of Health (FMOH) 2011. *Saving newborn lives in Nigeria: newborn health in the context of the integrated maternal, newborn and child health strategy*. Abuja: Yaliam press.
- First Bank of Nigeria. 2009. Strenght and stability in certain times: *Annual reports and accounts*. 516 x420. Lagos: First Bank of Nigeria.
- Forster, D.A., McLachlan, H.L. & Lumley, J. 2006. Factors associated with breastfeeding at six months postpartum in a group of Australian women. *Int Breastfeed J*. 1(1): 1-12.
- Gale, C., Logan, K.M., Samankumaran, S., Pakinson, J.R., Hyde, M.J and Modi, N. 2012. Effect of breastfeeding compared with formula feeding on infant body composition: a systematic review and meta analysis. *Am. J. Clin nutr*; 95: 656-669
- Ghwass, M.M.A. & Ahmed, D. 2011. Prevalence and predictors of 6-month exclusive breastfeeding in a rural area in Egypt. *Breastfeeding Medicine*. 6(4): 191-196.
- Gilbert, N. 2011. *Social research update*. Department of Sociology. Available: <http://sru.soc.surrey.ac.uk/SRU35.pdf>. Accessed 12/07/2013 [12 July 2013].
- Grassley, J. & Eschiti, V. 2008. Grandmother breastfeeding support: what do mothers need and want? *Birth*. 35(4): 329-335.
- Halpern, S.H., Levine, T., Wilson, D.B., MacDonell, J., Katsiris, S.E. & Leighton, B.L. 1999. Effect of labor analgesia on breastfeeding success. *Birth*. 26(2): 83-88.

- Haslam, C., Lawrence, W. & Haefeli, K. 2003. Intention to breastfeed and other important health-related behaviour and beliefs during pregnancy. *Family Practice*. 20(5): 528-530.
- Hayden, J.A. 2009. *Introduction to health behavior theory*. Newyork Jones & Bartlett Publishers.
- Hill, R. 1998. What sample size is “enough” in internet survey research. *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century*. 6(3-4): 1-12.
- Hoddinott, P., Tappin, D. & Wright, C. 2008. Breast feeding. *BMJ (Clinical Research Ed.)*. 336(7649): 881-887. DOI:10.1136/bmj.39521.566296.BE.
- Huo, D., Adebamowo, C., Ogundiran, T., Akang, E., Campbell, O., Adenipekun, A., Cummings, S., Fackenthal, J. et al. 2008. Parity and breastfeeding are protective against breast cancer in Nigerian women. *British Journal of Cancer*. 98(5): 992-996.
- Ibadin, O., Ofili, N., Morrison, O. & Nkwuo, E. 2012. Exclusive Breastfeeding and Malaria in Early Infancy: Experience from Benin City, Nigeria. *Journal of Medicine and Biomedical Research*. 11(1): 116-122.
- Iliff, P.J., Piwoz, E.G., Tavengwa, N.V., Zunguza, C.D., Marinda, E.T., Nathoo, K.J., Moulton, L.H., Ward, B.J. et al. 2005. Early exclusive breastfeeding reduces the risk of postnatal HIV-1 transmission and increases HIV-free survival. *Aids*. 19(7): 699-708.
- Imhonde, H., Shaibu, H., Imhonde, J. & Handayani, L. 2012. Type of Birth, Depression and Anxiety as determinates of Breastfeeding Attitude among Nursing Mothers. *International Journal of Public Health Science (IJPHS)*. 1(2): 49-54.
- International technology entertainment. 2013. *Plateau state of Nigeria*. 250 X 193. mysomuchworld.com. Accessed on 21 August 2014.
- Jager, M.D, Hartley, K., Terrazas, J. & Merrill, J. 2012. Barriers to breastfeeding-a global survey on why women start and stop breastfeeding; *European Journal of Obstetrics and Gynaecology*. 7(1): 25-30.
- Janz, N.K. & Becker, M.H. 1984. The health belief model: A decade later. *Health Education & Behavior*. 11(1): 1-47.
- Johanson, G.A. & Brooks, G.P. 2009. Initial scale development: sample size for pilot studies. *Educational and Psychological Measurement*. doi: 10.1177/0013164409355692

- Kabiru, C.W., Beguy, D., Crichton, J. & Zulu, E.M. 2011. HIV/AIDS among youth in urban informal (slum) settlements in Kenya: what are the correlates of and motivations for HIV testing? *BMC Public Health*. 11685-2458-11-685. DOI:10.1186/1471-2458-11-685.
- Kayode, G.A., Adekanmbi, V.T. & Uthman, O.A. 2012. Risk factors and a predictive model for under-five mortality in Nigeria: evidence from Nigeria demographic and health survey. *BMC Pregnancy and Childbirth*. 1210-2393-12-10. DOI:10.1186/1471-2393-12-10.
- Keith, L. & Papiernik, E. Eds. 1995. *Multiple pregnancy: Epidemiology, gestation and perinatal outcome*. First ed. Manchester: Parthenon publishing group Ltd.
- Kerr, RB., Dakishoni, L., Shumba, L., Msachi, R & Chirwa, M 2008. “We grandmothers know plenty “Breastfeeding, complementary feeding and multifaceted role of grandmothers in Malawi. *Social Science and Medicine*; 66 (5): 1095-1105.
- Kimani-Murage, E.W., Madise, N.J., Fotso, J.C., Kyobutungi, C., Mutua, M.K., Gitau, T.M. & Yatch, N. 2011. Patterns and determinants of breastfeeding and complementary feeding practices in urban informal settlements, Nairobi Kenya. *BMC Public Health*. 11396-2458-11-396. DOI:10.1186/1471-2458-11-396.
- Kimbro, R.T. 2006. On-the-job moms: work and breastfeeding initiation and duration for a sample of low-income women. *Maternal and Child Health Journal*. 10(1): 19-26.
- Kramer, M. & Kakuma, R. 2012. Optimal duration of exclusive breastfeeding (Review). *The Cochrane Library*; 8: 1-40. JohnWiley & Sons, Ltd <http://www.thecochranelibrary.com>
- Kronborg, H., Væth, M., Olsen, J., Iversen, L. & Harder, I. 2007. Effect of early postnatal breastfeeding support: a cluster-randomized community based trial. *Acta Paediatrica*. 96(7): 1064-1070.
- Ku, C and Chow, SK. 2010. Factors influencing the practice of exclusive breastfeeding among Hong Kong Chinese women: a questionnaire survey. *Journal of Clinical Nursing*; 19:2334-2445
- Kuti, O., Adeyemi, A.B. & Owolabi, A.T. 2007. Breast-feeding pattern and onset of menstruation among Yoruba mothers of South-west Nigeria. *European J.of Contraception and Reproductive Healthcare*. 12(4): 335-339.

- Labbok, M.H. 2001. Effects of breastfeeding on the mother. *Pediatric Clinics of North America*. 48(1): 143-158.
- Lamberti, L.M., Zakarija-Grković, I., Walker, C.L.F., Theodoratou, E., Nair, H., Campbell, H. & Black, R.E. 2013. Breastfeeding for reducing the risk of pneumonia morbidity and mortality in children under two: a systematic literature review and meta-analysis. *BMC Public Health*. 13(3): 1-8.
- Lamontagne, C., Hamelin, A. & St-Pierre, M. 2008. The breastfeeding experience of women with major difficulties who use the services of a breastfeeding clinic: a descriptive study. *International Breastfeeding Journal*. 3(17): 1-13.
- Lawoyin, T.O., Olawuyi, J.F. & Onadeko, M.O. 2001. Factors associated with exclusive breastfeeding in Ibadan, Nigeria. *Journal of Human Lactation: Official Journal of International Lactation Consultant Association*. 17(4): 321-325.
- Lee, H.J., Rubio, M.R., Elo, I.T., McCollum, K.F., Chung, E.K. & Culhane, J.F. 2005. Factors associated with intention to breastfeed among low-income, inner-city pregnant women. *Maternal and Child Health Journal*. 9(3): 253-261.
- Leung, T., Tam, W., Hung, E., Fok, T. & Wong, G. 2003. Sociodemographic and atopic factors affecting breastfeeding intention in Chinese mothers. *Journal of Paediatrics and Child Health*. 39(6): 460-464.
- Li, R., Scanlon, K.S. & Serdula, M.K. 2005. The validity and reliability of maternal recall of breastfeeding practice. *Nutrition Reviews*. 63(4): 103-110.
- Li, L., Zhang, M., Scott, J.A. & Binns, C.W. 2004. Factors associated with the initiation and duration of breastfeeding by Chinese mothers in Perth, Western Australia. *Journal of Human Lactation : Official Journal of International Lactation Consultant Association*. 20(2): 188-195. DOI:10.1177/0890334404263992 [doi].
- Lizewki, L. 2010. The health belief model. Wyne state University. (Unpublished).
- Lynn, M.R. 1986. Determination and quantification of content validity. *Nursing Research*. 35(6): 382-386.
- Maman, S., Cathcart, R., Burkhardt, G., Omba, S., Thompson, D. & Behets, F. 2012. The infant feeding choices and experiences of women living with HIV in Kinshasa, Democratic Republic of Congo. *AIDS Care*. 24(2): 259-265.

- Marinelli, K.A., Moren, K. & Taylor, and The Academy of Breastfeeding Medicine. Breastfeeding support for mothers in workplace employment or educational settings: Summary statement. *Breastfeeding Medicine*. 8(1): 137-142.
- Maru, S., Datong, P., Selleng, D., Mang, E., Inyang, B., Ajene, A., Guyit, R., Charurat, M. et al. 2009. Social determinants of mixed feeding behavior among HIV-infected mothers in Jos, Nigeria. *AIDS Care*. 21(9): 1114-1123.
- Matias, S.L., Nommsen-Rivers, L.A. & Dewey, K.G. 2012. Determinants of exclusive breastfeeding in a cohort of primiparous periurban peruvian mothers. *Journal of Human Lactation : Official Journal of International Lactation Consultant Association*. 28(1): 45-54. DOI:10.1177/0890334411422703 [doi].
- McKee, M., Zayas, L.H. & Jankowski, K. 2004. Breastfeeding intention and practice in an urban minority population: relationship to maternal depressive symptoms and mother–infant closeness. *Journal of Reproductive and Infant Psychology*. 22(3): 167-181.
- McLnnes, R.J., Love, J.G. & Stone, D.H. 2001. Independent predictors of breastfeeding intention in a disadvantaged population of pregnant women. *BMC Public Health*. 1:10. DOI: doi:10.1186/1471-2458-1-10.
- Meedya, S., Fahy, K. & Kable, A. 2010. Factors that positively influence breastfeeding duration to 6 months: a literature review. *Women and Birth*. 23(4): 135-145.
- Movement For State Creation of The Lowland state 2011. *Plateau state: the home of peace and tourism*. Available: <http://statecreation.gnbo.com.ng/History+of+Plateau>. Retrieved on 15th September 2013.
- Muluye, D., Woldeyohannes, D., Gizachew, M. & Tiruneh, M. 2012. Infant feeding practice and associated factors of HIV positive mothers attending prevention of mother to child transmission and antiretroviral therapy clinics in Gondar Town health institutions, Northwest Ethiopia. *BMC Public Health*. 12240-2458-12-240. DOI:10.1186/1471-2458-12-240 [doi].
- Murimi, M., Dodge, C.M., Pope, J. & Erickson, D. 2010. Factors that influence breastfeeding decisions among special supplemental nutrition program for women, infants, and children participants from Central Louisiana. *Journal of the American Dietetic Association*. 110(4): 624-627.

- Mutekanga, E. & Atekyereza, P. 2007. The relationship between child breastfeeding and infant health: The case of Rukungiri District in Uganda. *Journal of Social Development in Africa*. 22(2): 63.
- Myer, L & Harrison, A. 2010. Why do women seek antenatal care late? Perspective from rural South Africa. *Journal of Midwifery and Women's Health*; 48 (4): doi:10.1016/51526-9523(02)00421-x
- Nagy, E., Orvos, H., Pal, A., Kovacs, L and Loveland, K. 2001. Breastfeeding duration and previous breastfeeding previous breastfeeding experience. *Acta Paediatr* 90: 51-56
- National population commission 2009. *2006 Population and housing census of the federal republic of Nigeria*. (1). Abuja, Nigeria: National population commission.
- Natural Resource Defence Council 2005. *.Benefit of breastfeeding*. Available: <http://www.nrdc.org/breastmilk/benefits.asp> [29 May 2013].
- Nigerian Muse. nd. *Map of states and their location*. 514 X 575. Nigerian muse.
- National Population Commision 2009. *Nigerian demographic and health survey, 2008*; NPC, Abuja.
- National Population Commision 2014. *Nigerian demographic and health survey, 2013*; NPC, Abuja.
- Oche, M., Umar, A. & Ahmed, H. 2011. Knowledge and practice of exclusive breastfeeding in Kware, Nigeria. *African Health Sciences*. 11(3): 518 - 523
- Ogunlesi, T.A. 2010. Maternal socio-demographic factors influencing the initiation and exclusivity of breastfeeding in a Nigerian semi-urban setting. *Maternal and Child Health Journal*. 14(3): 459-465.
- Okeh, U.M. 2010. Breastfeeding and the mother–child relationship: A case study of Ebonyi State University Teaching Hospital, Abakaliki. *African Journal of Primary Health Care & Family Medicine*. 2(1): doi: 10.4102/phcfm.v2i1.97
- Okolo, S.N., Adewunmi, Y.B. & Okonji, M.C. 1999. Current breastfeeding knowledge, attitude, and practices of mothers in five rural communities in the Savannah region of Nigeria. *Journal of Tropical Pediatrics*. 45(6): 323-326.

- Oladokun, R., Brown, B. & Kikelomo, O. 2010. Infant feeding pattern of HIV-positive women in a prevention of mother-to-child transmission programme. *AIDS Care*. 22(9): 1108-1114.
- Oyibo, P., Okperi, B. & Oyibo, I. 2011. Breastfeeding pattern among mothers nursing infants aged 3-6 months in abiraka, delta state, Nigeria. *Continental J. Medical Research* 5 (2): 19 - 23
- Patel, R.R., Liebling, R.E. & Murphy, D.J. 2003. Effect of operative delivery in the second stage of labor on breastfeeding success. *Birth*. 30(4): 255-260.
- Piwoz, E.G., Ferguson, Y.O., Bentley, M.E., Corneli, A.L., Moses, A., Nkhoma, J., Tohill, B.C., Mtshuni, B. et al. 2006. Differences between international recommendations on breastfeeding in the presence of HIV and the attitudes and counselling messages of health workers in Lilongwe, Malawi. *International Breastfeeding Journal*. 1: 2.doi:10.1186/1746-4358-1-2
- Plateau State Government 2009. *State Strategic Health Development Plan*.
Jos: Plateau State Ministry of health.
- Polit, D.F. & Beck, C.T. 2006. The content validity index: are you sure you know what's being reported? Critique and recommendations. *Research in Nursing & Health*. 29(5): 489-497.
- Qureshi, A.M., Oche, O.M., Sadiq, U.A. & Kabiru, S. 2011. Using community volunteers to promote exclusive breastfeeding in Sokoto State, Nigeria. *Pan African Medical Journal*. 10. <http://dx.doi.org/10.4314/pamj.v10i0.72215>
- Raffle, H., Ware, L.J., Borchardt, A.R. & Strickland, H.A. 2011. *Factors that influence breastfeeding initiation and persistence in Ohio's Appalachian region*.
Ohio: Voinovich School of leadership and public affairs at Ohio.
- Riordan, J., Gross, A., Angeron, J., Krumwiede, B. & Melin, J. 2000. The effect of labor pain relief medication on neonatal suckling and breastfeeding duration. *Journal of Human Lactation : Official Journal of International Lactation Consultant Association*. 16(1): 7-12.
- Sanusi, R. & Falana, O. 2013. The Nutritional Status of Mothers Practicing Breast Feeding In Ibadan, Nigeria. *African Journal of Biomedical Research*. 12(2): 107-112.

- Sapna, S., Ameya, A., Rooma, S., Aarti, P., Rashid, A. & Narayan, K. 2009. Prevalence of exclusive breastfeeding and its correlates in an urban slum in western India. *International eJournal of Science Medicine & Education*. 3(2): 14-18.
- Schmied, V. & Barclay, L. 1999. Connection and pleasure, disruption and distress: women's experience of breastfeeding. *Journal of Human Lactation : Official Journal of International Lactation Consultant Association*. 15(4): 325-334.
- Scott, J., Landers, M., Hughes, R.M. & Binns, C. 2001. Factors associated with breastfeeding at discharge and duration of breastfeeding. *Journal of Paediatrics and Child Health*. 37(3): 254-261.
- Setegn, T., Gerbaba, M. & Belachew, T. 2011. Determinants of timely initiation of breastfeeding among mothers in Goba Woreda, South East Ethiopia: a cross sectional study. *BMC Public Health*. 11217-2458-11-217. DOI:10.1186/1471-2458-11-217.
- Shah, M., Johns, B., Abimiku, A. & Walker, D.G. 2011. Cost-effectiveness of new WHO recommendations for prevention of mother-to-child transmission of HIV in a resource-limited setting. *AIDS (London, England)*. 25(8): 1093-1102. DOI:10.1097/QAD.0b013e32834670b9.
- Sika-Bright, S. 2010. Socio-cultural factors influencing infant feeding practices of mothers attending welfare clinic in Cape Coast, Ghana. Department of Sociology and Anthropology, University of Cape Coast.
- Sule, E.A. 2011. Breastfeeding and breastcancer, a veritable association among Nigerian women? *Continental J. Medical Research* 5 (2): 1 - 5
- Suresh, K. & Chandrashekara, S. 2012. Sample size estimation and power analysis for clinical research studies. *Journal of Human Reproductive Sciences*; 5(1): 7–13.
Doi: [10.4103/0974-1208.97779](https://doi.org/10.4103/0974-1208.97779)
- Sweeney, M.A. & Gulino, C. 1987. The health belief model as an explanation for breastfeeding practices in a Hispanic population. *Advances in Nursing Science*. 9(4): 35-50.
- Tampah-Naah, AM., & Kumi-Kyereme. 2013. Determinants of exclusive breastfeeding among mothers in Ghana: a cross-sectional study. *International Breastfeeding Journal*; 8:13 doi.10.1186/1746-4358-8-13.

- Tan, K.L. 2011. Factors associated with exclusive breastfeeding among infants under six months of age in peninsular malaysia. *Int Breastfeed J.* 6(2): 1-7.
- Tutt, S. 2012. Planning to breastfeed? Prepare to succeed. Australian Breastfeeding association. https://www.breastfeeding.asn.au/bf-info/your-baby_arrives/planning-prepare-succeed. Accessed on 3rd March 2014.
- Uchendu, U., Ikefuna, A. & Emodi, I. 2009. Factors associated with exclusive breastfeeding among mothers seen at the University of Nigeria Teaching Hospital. *South African Journal of Child Health.* 3(1): 14-19.
- Ugboaja, J., Berthrand, N., Igwebge AO & Obi-Nwosu, A. 2013. Barriers to postnatal care and exclusive breastfeeding among urban women in South-eastern Nigeria; *Nigerian Medical Journal.* 54(1): 45-50.
- Ukegbu, A., Ukegbu, P., Onyeonoro, U. & Ubajaka, C. 2010. Determinants of breastfeeding patterns among mothers in Anambra State, Nigeria. *South African Journal of Child Health.* 5(4): 112-116.
- Ukwuani, F.A. & Suchindran, C.M. 2003. Implications of women's work for child nutritional status in sub-Saharan Africa: a case study of Nigeria. *Social Science & Medicine.* 56(10): 2109-2121.
- Umar, A. & Oche, M. 2013. Breastfeeding and Weaning Practices in an Urban Slum, North Western Nigeria. *International Journal of Tropical Disease & Health.* 3(2): 114-125.
- UNAIDS 2011. *Expanding breastfeeding by HIV positive mothers in Nigeria: from census to action.* Retrieved from . Available: www.iycn.org.
- UNICEF 2005. *Baby-Friendly Hospital* Available at http://www.unicef.org/nutrition/index_24806.html [5th August 2014].
- UNICEF 2010. *Improving exclusive breastfeeding practices.* Available: www.globalhealthcommunication.org [12th July 2013].
- UNICEF 2012. Levels & Trends in Child Mortality, Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation. *New York: UNICEF.*
- UNICEF 2013. *Breastfeeding.* Available: http://www.unicef.org/nutrition/index_24824.html [5th August 2014].

- UNICEF. 2014. HIV and infant feeding: The facts. Available at <http://www.unicef.org/progamme/breastfeeding/baby.htm> 5th August 2014.
- Velpuri, J. 2004. *Breastfeeding Knowledge, and Attitudes, Beliefs, and Intentions regarding Breastfeeding in the Workplace among Students and Professionals in Health-Related Fields*. <http://hdl.handle.net/10919/29073>.
- WHO 2013. *Essential nutrition actions: Improving maternal, newborn, infant and young child health and nutrition*. Geneva: World Health Organization.
- Wambach, KA and Cohen, SM. 2009. Breastfeeding experiences of urban adolescent mothers. *Journal of paediatric nursing*; 24(4): 244-254
- Wilhelm, S.L., Rodehorst, T.K., Stepan, M.B.F., Hertzog, M. & Berens, C. 2008. Influence of intention and self-efficacy levels on duration of breastfeeding for midwest rural mothers. *Applied Nursing Research*. 21(3): 123-130.
- World Health Organization. 2001. Infant and young child malnutrition: Global strategy for infant and young child feeding. Geneva. WHO.
- World Health Organization 2003. Infant and young child feeding: a tool for assessing national practices, policies and programmes, Geneva. WHO.
- World Health Organization 2007. Planning guide for national implementation of the Global Strategy for Infant and Young Child Feeding. Geneva. WHO.
- World Health Organization/UNICEF 2008. Strengthening action to improve feeding of infants and young children 6–23 months of age in nutrition and child health programmes. *Report of Proceedings, Geneva. October*. 6-9.
- World Health Organization 2010. Guidelines on HIV and Infant Feeding 2010: Principles and Recommendations for Infant Feeding in the Context of HIV and a Summary of Evidence. Geneva. WHO.
- World Health Organization /UNICEF 2013. Essential Nutrition Actions: improving maternal, newborn, infant and young child health and nutrition Geneva. WHO.
- World Health Organization (WHO) 2014. *Baby-friendly Initiative*. Geneva: WHO.
- World Medical Association 2013. World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects. *JAMA : The Journal of the*

American Medical Association. 310(20): 2191-2194. DOI:10.1001/jama.2013.281053.
Accessed 16 November 2013.

Worugji, I. & Etuk, S. 2005. The National Breastfeeding Policy in Nigeria: the working mother and the law. *Health Care for Women International*. 26(7): 534-554.

Xu, F., Binns, C., Zheng, S., Wang, Y., Zhao, Y. & Lee, A. 2007. Determinants of exclusive breastfeeding duration in Xinjiang, PR China. *Asia Pacific Journal of Clinical Nutrition*. 16(2): 316.

Yaghmaie, F. 2003. Content validity and its estimation. *Journal of Medical Education*. 3(1): 25-27.

You, D., Bastian, P., Wu, J and Wardlaw, T 2013. *Levels and trends in child mortality* New York: UN interagency group for child mortality estimation. United nation children fund.

Appendices

Appendix 1: Ethical approval



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee



Room E52-24 Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 406 6338 + Facsimile [021] 406 6411
Email: shuretta.thomas@uct.ac.za
Website: www.health.uct.ac.za/research/humanethics/forms

13 May 2014

HREC REF: 316/2014

A/Prof S Clow
Nursing and Midwifery
Health & Rehab
F45, OMB

Dear A/Prof Clow

PROJECT TITLE: BREASTFEEDING INTENTION AND PRACTICES OF WOMEN IN PLATEAU STATE, NIGERIA

Thank you for submitting your study to the Faculty of Health Sciences Human Research Ethics Committee for review.

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study.

Approval is granted for one year until the 30th May 2015

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.

(Forms can be found on our website: www.health.uct.ac.za/research/humanethics/forms)

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

We acknowledge that the student Andy Emmanuel is also involved in this study.

Please quote the HREC reference no in all your correspondence.

Yours sincerely

Signed by candidate

PROFESSOR M BLOCKMAN
CHAIRPERSON, FHS HUMAN ETHICS

Federal Wide Assurance Number: FWA00001637.

Institutional Review Board (IRB) number: IRB00001938

This serves to confirm that the University of Cape Town Human Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Convention on Harmonisation Good Clinical Practice (ICH GCP) and Declaration of Helsinki guidelines.

The Human Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code of Federal Regulation Part 50, 56 and 312.

Appendix 2: Permission from Plateau State Ministry of Health.



HIS/RI/VOL_n/X
19th May, 2014

Mr. Andy Emmanuel
Division of Nursing and Midwifery,
Department of Health and Rehabilitation Sciences
University of Cape Town
South Africa

APPLICATION FOR PERMISSION TO CONDUCT RESEARCH.

Your letter dated 15th May, 2014, refers.

I have been directed to convey the approval granted to you to conduct research on the dissertation Titled "Breastfeeding, Intentions and Practices of women in Plateau State".

Kindly remember to submit to the Ministry a copy of your research findings as soon as the dissertation is made complete.

Signed by candidate

Paul D. Dwagas
Director Planning
For: Hon. Commissioner

Appendix 3: Participant information

To mothers who have given birth to a live baby not more than three years ago i.e.between 2011-2013.

I am inviting you to participate in a research study.

WHAT IS THE RESEARCH TITLE?

Breastfeeding intention and practices of women attending antenatal clinics in plateau state

WHO IS CONDUCTING THIS STUDY?

My name is Andy Emmanuel. I am a registered nurse and a master's student at the University of Cape Town, South Africa. This research is a requirement for the award of degree of Master of Science (Nursing).

WHAT IS THE STUDY ABOUT?

The purpose of this research is to identify the current breastfeeding practice and identify the factors that influence breastfeeding. This will serve as baseline information for planning breastfeeding promotion programs in the future in Plateau state.

WHAT DO I HAVE TO DO?

You are invited to participate in this study if you have given birth to a live baby within the last three years and are currently pregnant. If you agree to participate in the study, you will be required complete a questionnaire about the breastfeeding or feeding of your last baby and how you plan to feed the next baby. You will be required to complete the questionnaire now and return it as soon as you can. It will take about forty minutes for you to do that and a place will be provided to make you comfortable. If you cannot write and read, I will be glad to assist in reading out the questions to you and writing your responses.

IS THE INFORMATION I GIVE CONFIDENTIAL?

Some questions may require personal information from you. This will take about 40 minutes and will be done in a private place as you wait to be attended to. Information you will give will not be shared with anybody and your name will not be recorded. All information you will give will be kept in confidence and use only for the purpose of the research. The information you will give will be kept safe and will only be accessed by the research for research purpose and nothing more.

WHAT WILL BE THE RISK INVOLVED?

You will not be exposed to any physical risk if you participate in this research. However, there is a risk of intruding into your personal life. All information you will give will be kept in confidence and use only for the purpose of the research only. Furthermore, no information will be linked to you, i.e. your name will not be mentioned in the research and data collected from you will not be analyzed alone but grouped with others. I will be happy to assist you if you have concerns about infant feeding.

IS PARTICIPATION VOLUNTARY? AND CAN I WITHDRAW WITHOUT BEING AFFECTED?

Participation is voluntary and you may withdraw at any time. Withdrawal from the study will not affect the care you receive in the clinic.

WHAT DO I BENEFIT FROM THIS STUDY?

Although you will not receive any financial benefits or direct health benefits for participating in this study, you will contribute to the understanding of breastfeeding practices in Plateau state. It will be useful in planning breastfeeding promotion programs in the future that you and your community may benefit from these. An arrangement will be made in the clinic for management of problems related to feeding your infant that may be discovered during data collection.

CAN I ASK QUESTIONS

I will be glad to answer any questions you may wish to ask. My phone number is 07032860876.

Alternatively, you may speak with my supervisor, Professor Sheila Clow, Division of Nursing and Midwifery, University of Cape Town, in Cape Town (+2783 659 5266) or email her at Sheila.clow@uct.ac.za. If you have any question about how the study is being conducted, you may contact the University of Cape Town Human Research Ethics Committee (HREC) Chair, Professor Marc Blockman (+27214066496) or email him at marc.blockman@uct.ac.za. Or you may contact the Honourable Commissioner of health, Plateau State Ministry of Health through Mr Davou Stephen (+2348036819758) who is the Director of Research and Planning, Ministry of Health, Plateau State.

If you are willing to participate in this study please complete the consent form attached.

Thank you

Appendix 4: Consent form

CONSENT FORM

University of Cape Town.

Breastfeeding intention and Practices of women in plateau state, Nigeria.

This will be read to participants that cannot read.

I _____ have read (or had been read to me by _____) the Information Sheet. I understand what is required of me and I have had all my questions answered. I do not feel that I am forced to take part in this study and I am doing so of my own free will. I know that I can withdraw at any time if I so wish and that it will have no bad consequences for me.

Signed:

_____	_____
Participant	Date and place
_____	_____
Researcher	Date and place

Appendix 5: Initial questionnaire

Questionnaire A

QUESTIONNAIRE ON BREASTFEEDING INTENSION AND PRACTICES OF WOMEN IN PLATEAU STATE, NIGERIA.

INSTRUCTIONS

- If you had twins or multiple births, please answer these questions for the baby who was born first.
- Sometime you are asked to write in a number, please enter number as figure rather than words.
- Sometimes you will be asked to write the answer in your own words.
- For questions with options, tick (✓) or circle the option that best applies to you.(Please pick only one from the options)
- Please be honest with all your answers.

Section A: Background information.

1. Age
2. How far is your pregnancy? (in weeks).....
3. In your previous pregnancy, did you have a single child, twins (or more)?
 - a. Single birth
 - b. Twins
 - c. More than two
4. What is your highest level of educational?s
 - a. No formal education
 - b. Primary
 - c. Secondary
 - d. Tertiary
5. Marital status?
 - a. Single
 - b. Married
6. How many children do you have?.....
7. What is your occupation?.....
8. What is the family average monthly earnings?
 - a. Less than N20,000
 - b. N20, 000 to N40,000

- c. N41,000 to N 80,000
 - d. N81,000 to N120,000
 - e. More than N120, 000
9. Which of the following options best describes your economic status?
- a. Poor
 - b. Below average
 - c. Average
 - d. Above average
 - e. Affluent

Section B: breastfeeding practice and related factors.

10. Thinking about the birth itself, what type of delivery did you have?
- a. Normal
 - b. Forceps
 - c. Vacuum extraction
 - d. Caesarean section
11. When you were in labour, what kind of pain relief did you have, if any?
- a. Epidural or spinal injection
 - b. Pethidine
 - c. Gas or air to breathe
 - d. A general anaesthesia
 - e. Water
 - f. Nothing at all
 - g. Other s (please specify).....
12. How much did your baby weigh when he/she was born. Please give your answer in Kilograms.....
13. Before your last baby was born, how did you plan to feed him/her in the first six months?
- a. Breast milk
 - b. Formula
 - c. Combination of breast and formula
 - d. I didn't have any plans.

14. Why did you think you would feed your baby this way? Please write all reasons.....

15. How old was your baby at his or her first feed?
 a. Less than 30 minutes
 b. Between 30 minutes and 1 hour
 c. Between 1 hour and 4 hours
 d. More than four hours after delivery.
16. What kind of food did your baby have for his/her first feed?
 a. Breast milk.
 b. Formula
 c. Others
 (specify).....

17. How old was your baby when you first introduced anything other than breast milk.....
18. What was the main reason that led you to choose the way you fed this baby?.....

19. If your baby had any fluid (water and formula) other than breast milk in the early days of breastfeeding, was it because you were advised to or because you wanted your baby to have it.
 a. I was advised to give anything else
 b. I wanted to give my baby something else
 c. I only gave my baby breast milk in the early days.
20. Were there any problems breastfeeding your baby in the early days?.....
 if so, what were
 they.....

.....

21. Which of the following best describes your baby's feeding at one(1) week, six (6) weeks, twelve (12) weeks and twenty four (24) weeks. (Please place a tick in the relevant box for each column. There should only be 1 tick per column and 4 ticks altogether).

	1 week	6 weeks	12 weeks	24 weeks
Breast milk only				
Formula only				
Breast milk and formula or other foods				

22. What are the reasons for feeding your baby this way?

Week one reason

(s).....

Week six reason

(s).....

Week twelve reason (s)

.....

Week twenty

four.....

23. Did you attend any antenatal care when you were pregnant with your previous child?.....
24. Did anyone discussed feeding your baby with you during pregnancy.....
25. Who discussed feeding your baby with you?
- a. Doctor
 - b. Nurse
 - c. Others (please specify).....
26. While you were pregnant with your previous baby, did you receive any information about the health benefits of breastfeeding?.....
27. Where did you receive this information?.....
28. How have your friends and family fed their children when they were babies?
- a. Most of them gave formula
 - b. Most of them breastfed
 - c. About half of them formula fed and half breast fed.
 - d. I don't know
29. How were you fed when you were a newborn baby?
- a. Breastfed
 - b. Formula fed
 - c. Breast and formula milk
 - d. I don't know

30. If you had previous children, how did you feed them in the first six months?

	Breast milk only	Formula only	Combination of formula and breast milk
Eldest child			
Second eldest child			
Third eldest child			
Fourth eldest child			

31. Was your baby born in the hospital or at home?
- a. Hospital

- b. Home
32. On the day that you left hospital or at 48 hours if you had a home birth, what most accurately describe how you fed your baby?
- a. Breast milk
 - b. Formula
 - c. Combination of breast and formula
 - d. Expressing breast milk
 - e. My baby was not feeding
 - f. I don't remember.
33. Since your baby was born, have you had any of the following as a result of breastfeeding?
- a. Mastitis (inflammation of the breast tissue)
 - b. Thrush
 - c. Nipple pain
 - d. None of the above
 - e. Others specify.....
34. Since your baby was born, did anyone advise you not to breastfeed or stop breastfeeding or to take prescribed medication?
- a. Yes
 - b. No
35. Who or what helped you most to continue breastfeeding?
- a. Own experience
 - b. Friends/ other mothers
 - c. Mother in law
 - d. Other relatives
 - e. Health professional (Nurses/Doctors)
 - f. Peer or support groups
 - g. Voluntary organizations
 - h. Books/ magazine/TV
 - i. Others (please specify).....
36. Who or what helped you least to continue breastfeeding?
- a. Own experience
 - b. Friends/ other mothers
 - c. Mother in law

- d. Other relatives
- e. Health professional (Nurses/Doctors)
- f. Peer or support groups
- g. Voluntary organizations
- h. Books/ magazine/TV
- i. Others (please specify).....
-

37. Who or what influenced you to stop breastfeeding?

- a. Own experience
- b. Friends/ other mothers
- c. Mother in law
- d. Other relatives
- e. Health professional (Nurses/Doctors)
- f. Peer or support groups
- g. Voluntary organizations
- h. Books/ magazine/TV
- i. Others (please specify).....
-

38. Did you have skin to skin contact with your baby after he/she was born (in the first hour after they were born)?

- a. Yes
- b. No
- c. Can't remember

39. If yes, who assisted you?

- a. I was not shown
- b. Nurse
- c. Nursing/medical student
- d. Friends /relative
- e. Doctor
- f. Ward attendants

g. Others (please specify).....
.....

40. Did they stay with you while you were breastfeeding?

- a. I was not shown
- b. Stayed the whole time until the baby was asleep
- c. Left once the baby was feeding but came back to check on you
- d. Left once the baby was feeding and did not come back to check on you
- e. Left before the baby had started feeding.

41. How useful did you find this help?

- a. I was not given any help at all at this time
- b. Extremely useful
- c. Very useful
- d. Not very useful
- e. Not useful at all.

42. Were there problems breastfeeding your baby in the early days?

- a. Yes
- b. No

if yes what were

they.....

.....

.....

.....

.....

.....

.....

43. Did anyone give you help with problem (difficulty with breastfeeding) in the early days?

- a. I didn't have any problem
- b. Nurse helped me
- c. Doctor helped me
- d. Friend/ relative helped me.
- e. Members of local support group helped me.
- f. Others (please specify).....

44. After you left the hospital, did you receive any home visit from any of the following?
- a. Nurse
 - b. Doctor
 - c. No visit in the first two weeks
 - d. Others (please specify).....
- If you receive visit, how many did you receive.....
45. Were you given information about any of the following to help with breastfeeding after you went home?
- a. I was not given any information about support services
 - b. Community breastfeeding support group
 - c. Others (please specify).....
 -
46. How easy was it for you to find breastfeeding support services?
- a. I did not seek any support services
 - b. Easy
 - c. Difficult
 - d. I was unable to access support services.
47. How do you intend to feed the baby you are pregnant with?
- a. Breast milk
 - b. Formula
 - c. Combination of breast and formula
48. Why will you feed your baby this way?.....
-
-
-
-
-
49. How long do you intend to feed this baby with breast milk only.....
50. Why.....
-

-
-
51. At what age of your baby will you stop breastfeeding entirely?.....
52. If you are aware of the benefits of breast feeding for the baby, please write them below.....
-
-
-
53. If you are aware of the benefits of formula feeding for the baby, please write them below
-
-
-
54. Have you ever seen an advertisement on television, radio or in a magazine or elsewhere for breastfeeding?.....
55. Have you ever seen an advertisement on television, radio or in a magazine or elsewhere for infant formula?
-
-
-
56. Thinking about the most helpful information you received about breast feeding since your baby was born, who or what had the most impact on you?
- a. Own experience
 - b. Friends/other mothers
 - c. Partner
 - d. Your mother
 - e. Mother-in-law
 - f. Sisters
 - g. Other relatives
 - h. Health professionals
 - i. Books and magazines

- j. Others (please specify).....
.....

- 57. Since your baby was born, have you ever feed him/her in a public place
 - a. No-I never fed in a public place.
 - b. Yes-Breastfed in a public place
 - c. Yes-bottle fed infant formula in a public place
 - d. Yes – bottle fed expressed breast milk.
- 58. Have you ever had problems finding somewhere to breastfeed your baby in a public place?.....
- 59. Have you ever been stopped or made to feel uncomfortable about breastfeeding in a public place?.....
- 60. Which of the following best describes breastfeeding your baby?
 - a. I would like to have breastfed for longer
 - b. I breastfed for as long as I intended
 - c. I had breastfed for longer than I had intended
- 61. For how long (in months or years) did you breast feed your previous baby?.....
- 62. If you planned to and started breastfeeding, what were your reasons for stopping breastfeeding?.....
.....
.....
.....

SECTION C EMPLOYEMENT.

- 63. What is the occupation of the baby's father?.....
- 64. Were you working when you had your previous baby?.....
- 65. How many hours were you working in a day when you had your previous child?.....
- 66. How old was your baby when you returned to work?.....
- 67. What arrangements (if any) did you make regarding the care of your baby when you are at work?.....
.....

.....
How would you describe your main employment status just before you had your baby?

- a. Working for payment or profit
- b. Looking for first Job
- c. Unemployed
- d. Student or pupil
- e. Looking after home/family
- f. Unable to work due to permanent sickness/disability.
- g. Others (please specify).....

68. Did (do) you work as an employee or are (were) you self-employed in your main Job?

- a. Employee
- b. Self employed, with paid employee
- c. Self employed, without paid employee
- d. Assisting relative/ others (not receiving a fixed wage or salary)
- e. Looking after home / family.

69. Do you plan to start work again within the next two years?

- a. Yes fulltime
- b. Yes part time
- c. No
- d. Don't know
- e. Working at the moment.

70. Does your employer provide facilities at work for you to express milk or breastfeed your baby if you want to?

- a. Yes-to express milk
- b. Yes to breastfeed
- c. No- neither
- d. Not applicable

REF-desktop/draft5/002

Appendix 6: Scores of judge 1

Question	Relevance	Clarity	Simplicity	Ambiguity
1	4	3	4	3
2	3	3	3	3
3	4	3	3	3
4	4	4	4	4
5	4	4	4	4
6	4	4	4	4
7	3	3	3	3
8	4	4	4	4
9	4	4	4	4
10	4	3	4	3
11	4	3	3	3
12	4	2	3	2
13	4	3	4	3
14	4	4	4	4
15	4	4	4	4
16	4	3	4	3
17	4	4	4	4
18	4	4	4	4
19	4	2	3	2
20	4	4	4	4
21	4	4	4	4
22	4	4	4	4
23	4	4	4	4
24	4	4	4	4
25	4	3	4	3
26	4	4	4	4
27	4	4	4	4
28	4	4	4	4
29	4	4	4	4
30	4	4	4	4
31	4	2	3	2
32	4	4	4	4
33	4	4	4	4
34	4	4	4	4
35	4	4	4	4
36	4	3	4	3

37	4	3	3	3
38	3	3	3	3
39	4	3	3	3
40	4	3	3	3
41	4	4	4	4
42	4	4	4	4
43	3	2	2	2
44	4	4	4	4
45	4	2	3	2
46	4	4	4	4
47	4	2	4	2
48	4	4	4	4
49	4	4	4	4
50	4	4	4	4
51	4	4	4	4
52	4	4	4	4
53	4	4	4	4
54	4	4	4	4
55	4	4	4	4
56	4	4	4	4
57	4	4	4	4
58	4	3	4	3
59	4	3	4	3
60	4	4	4	4
61	4	4	4	4
62	4	3	3	3
63	4	3	3	3
64	4	4	4	4
65	4	4	4	4
66	4	4	4	4
67	4	3	3	3
68	4	4	4	4
69	3	4	4	4
70	4	4	4	4
71	4	4	4	4

Appendix 7: Scores of judge 2

Question	Relevance	Clarity	Simplicity	Ambiguity
1	1	4	4	4
2	3	4	3	3
3	2	3	3	3
4	4	4	4	4
5	4	4	4	4
6	4	4	4	4
7	4	4	4	4
8	1	4	4	4
9	1	4	4	4
10	4	4	4	4
11	4	4	4	4
12	4	4	4	4
13	4	4	4	4
14	4	4	4	4
15	4	4	4	4
16	4	4	4	4
17	4	4	4	4
18	4	4	4	4
19	3	4	4	4
20	4	4	4	4
21	4	4	4	4
22	4	4	4	4
23	4	4	4	4
24	4	4	4	4
25	1	4	4	4
26	3	4	4	4
27	4	4	4	4
28	4	4	4	4
29	4	4	4	4
30	4	4	4	4

31	4	4	4	4
32	1	4	4	4
33	1	4	4	4
34	1	4	4	4
35	4	4	4	4
36	4	4	4	4
37	4	4	4	4
38	4	4	4	4
39	1	4	4	4
40	1	4	4	4
41	1	4	4	4
42	4	4	4	4
43	4	4	4	4
44	4	4	4	4
45	4	4	4	4
46	3	4	4	4
47	4	4	4	4
48	4	4	4	4
49	4	4	4	4
50	3	4	4	4
51	1	4	4	4
52	4	4	4	4
53	3	4	4	3
54	4	4	4	4
55	4	4	4	4
56	4	4	4	4
57	4	4	4	4
58	4	4	4	4
59	4	4	4	4
60	3	3	3	3
61	4	4	4	4
62	4	4	4	4
63	4	4	4	4

64	3	4	4	3
65	4	4	4	4
66	4	4	4	4
67	4	4	4	4
68	3	3	3	3
69	4	4	4	4
70	2	1	2	2
71	4	4	4	4

Appendix 8: Scores of judge 3

Question	Relevance	Clarity	Simplicity	Ambiguity
1	4	4	4	4
2	3	4	3	3
3	3	3	3	3
4	4	4	4	4
5	4	4	4	4
6	4	4	4	4
7	4	4	4	4
8	3	3	4	2
9	4	4	4	3
10	4	4	3	4
11	4	4	4	4
12	4	3	4	4
13	4	4	4	4
14	4	4	4	4
15	4	4	4	4
16	4	4	4	3
17	4	4	4	4
18	4	4	4	4
19	4	4	4	4
20	4	4	4	4
21	4	4	4	4
22	4	4	4	4
23	4	4	4	4
24	4	4	4	4
25	4	4	4	3
26	4	4	4	4
27	4	4	4	4
28	4	4	4	4
29	4	3	3	4
30	4	4	4	4

31	4	4	4	4
32	4	4	4	4
33	4	3	3	4
34	4	4	4	4
35	4	4	4	4
36	4	4	4	4
37	4	4	4	4
38	4	4	4	4
39	3	4	4	4
40	4	4	4	3
41	4	4	4	4
42	4	4	4	4
43	4	4	4	4
44	4	4	4	4
45	4	3	3	3
46	4	4	4	4
47	4	4	4	4
48	4	4	4	4
49	4	4	4	4
50	4	4	4	4
51	4	4	4	3
52	4	4	4	4
53	4	4	4	4
54	4	4	4	4
55	4	4	4	4
56	3	3	3	3
57	4	4	4	4
58	4	4	4	4
59	4	4	4	4
60	4	4	4	4
61	4	4	4	4
62	4	4	4	3
63	4	4	4	4

64	4	4	4	4
65	4	4	4	4
66	4	4	4	4
67	4	4	4	4
68	4	4	4	4
69	4	4	4	3
70	4	4	4	4
71	4	4	4	4

Appendix 9: Scores of judge 4

Question	Relevance	Clarity	Simplicity	Ambiguity
1	4	4	4	4
2	4	3	3	3
3	4	3	2	3
4	4	4	4	4
5	4	4	4	4
6	4	4	4	4
7	4	4	4	4
8	4	4	4	4
9	4	4	4	4
10	4	3	3	3
11	4	4	4	4
12	4	4	3	3
13	4	4	3	4
14	4	4	4	4
15	4	4	3	3
16	4	3	3	4
17	4	4	3	1
18	4	4	4	4
19	4	4	2	2
20	4	4	4	4
21	4	4	4	4
22	4	4	4	4
23	4	4	4	4
24	4	4	4	4
25	4	3	3	3
26	4	4	4	4
27	4	4	4	4
28	4	4	4	4
29	4	4	4	4
30	4	4	4	4
31	4	3	4	4

32	4	4	3	3
33	3	2	2	2
34	3	3	3	3
35	4	4	4	4
36	4	4	4	4
37	4	4	4	4
38	4	4	4	4
39	4	4	4	4
40	4	4	3	3
41	4	4	4	4
42	4	4	4	4
43	4	4	4	4
44	4	4	1	1
45	4	2	1	2
46	4	3	4	3
47	4	4	4	4
48	4	4	4	4
49	4	4	1	2
50	4	2	3	1
51	4	4	4	4
52	4	2	1	1
53	3	1	1	1
54	4	3	2	3
55	4	4	4	4
56	4	4	4	4
57	4	4	4	4
58	4	3	3	2
59	3	3	3	2
60	4	3	3	3
61	4	4	4	4
62	4	3	3	3
63	4	4	4	4
64	4	4	4	4

65	4	4	4	4
66	4	4	4	4
67	4	2	3	2
68	4	2	3	3
69	4	4	4	4
70	4	2	2	2
71	4	1	1	2

Appendix 10: Scores of judge 5

Question	Relevance	Clarity	Simplicity	Ambiguity
1	4	4	4	4
2	3	4	3	4
3	3	2	4	3
4	4	3	3	4
5	4	4	4	4
6	4	4	4	4
7	4	4	4	4
8	4	4	4	4
9	1	2	2	2
10	4	4	4	4
11	3	1	1	2
12	4	4	4	4
13	4	4	4	4
14	4	4	4	4
15	4	2	2	2
16	4	2	2	2
17	4	4	4	4
18	4	4	4	4
19	3	1	2	2
20	4	4	4	4
21	4	4	4	4
22	4	4	4	4
23	4	4	4	4
24	4	4	4	4
25	1	1	2	2
26	2	2	2	2
27	4	4	4	4
28	4	4	4	4
29	1	2	2	2
30	4	4	4	4
31	4	4	4	4

32	4	4	4	4
33	4	4	4	4
34	2	2	2	2
35	1	2	2	2
36	1	2	2	2
37	4	4	4	4
38	1	1	1	1
39	3	3	3	3
40	4	4	4	4
41	4	4	4	4
42	4	4	4	4
43	4	4	4	4
44	4	4	4	4
45	3	3	3	3
46	3	3	3	3
47	4	4	4	4
48	4	4	4	4
49	4	4	4	4
50	4	4	4	4
51	3	3	3	3
52	4	4	4	4
53	1	2	2	2
54	4	4	4	4
55	1	2	2	2
56	4	4	4	4
57	4	4	4	4
58	4	4	4	4
59	4	4	4	4
60	4	4	4	4
61	4	4	4	4
62	2	1	1	2
63	4	4	4	4
64	4	4	4	4

65	4	4	4	4
66	4	4	4	4
67	4	3	3	3
68	3	3	3	3
69	1	2	2	2
70	2	2	2	2
71	4	4	4	4

Appendix 11: Questionnaire A-Original English version⁵

Questionnaire on breastfeeding intension and practices of women in plateau state,
Nigeria.

INSTRUCTIONS

- If you had twins or multiple births, please answer these questions for the baby who was born first.
- Sometime you are asked to write in a number, please enter number as figure rather than words.
- Sometimes you will be asked to write the answer in your own words.
- For questions with options, tick (✓) or circle the option that best applies to you.(Please pick only one from the options)
- Please be honest with all your answers.

Section A: Background information.

1. "Age
2. How far is your pregnancy? (in weeks).....
3. In your previous pregnancy, did you have a single child, twins (or more)?
 - d. Single birth
 - e. Twins
 - f. More than two
4. What is your highest level of educational?
 - e. No formal education
 - f. Primary
 - g. Secondary
 - h. Tertiary
5. Marital status?
 - c. Single
 - d. Married
6. How many children do you have?.....
7. What is your occupation?.....

⁵ Adapted from Begley et al 2008.

8. What is the family average monthly earnings?
 - f. Less than N20,000
 - g. N20, 000 to N40,000
 - h. N41,000 to N 80,000
 - i. N81,000 to N120,000
 - j. More than N120, 000

Section B: breastfeeding practice and related factors.

9. Thinking about the birth itself, what type of delivery did you have?
 - e. Normal
 - f. Forceps
 - g. Vacuum extraction
 - h. Caesarean section
10. When you were in labour, what kind of pain relief did you have, if any?
 - h. Epidural or spinal injection
 - i. Pethidine
 - j. Gas or air to breathe
 - k. A general anaesthesia
 - l. Water
 - m. Nothing at all
 - n. Other s (please specify).....
11. How much did your baby weigh when he/she was born. Please give your answer in Kilograms.....
12. Before your last baby was born, how did you plan to feed him/her in the first six months?
 - e. Breast milk
 - f. Formula
 - g. Combination of breast and formula
 - h. I didn't have any plans.
13. Why did you think you would feed your baby this way? Please write all reasons.....

 ...

-
 ...

 ...

 ...
14. How old was your baby at his or her first feed?
- e. Less than 30 minutes
 - f. Between 30 minutes and 1 hour
 - g. Between 1 hour and 4 hours
 - h. More than four hours after delivery.
15. What kind of food did your baby have for his/her first feed?
- d. Breast milk.
 - e. Formula
 - f. Others
 (specify).....

16. How old was your baby when you first introduced anything other than breast milk.....
17. What was the main reason that led you to choose the way you fed this baby?.....

18. If your baby had any fluid (water and formula) other than breast milk in the early days of breastfeeding, was it because you were advised to or because you wanted your baby to have it.
- d. I was advised to give anything else
 - e. I wanted to give my baby something else
 - f. I only gave my baby breast milk in the early days.
19. Were there any problems breastfeeding your baby in the early days?.....
 if so, what were
 they.....

.....

 ...

20. Which of the following best describes your baby's feeding at one(1) week, six (6) weeks, twelve (12) weeks and twenty four (24) weeks. (Please place a tick in the relevant box for each column. There should only be 1 tick per column and 4 ticks altogether).

	1 week	6 weeks	12 weeks	24 weeks
Breast milk only				
Formula only				
Breast milk and formula or other foods				

21. What are the reasons for feeding your baby this way?

Week one reason

(s).....

 ...

Week six reason

(s).....

Week twelve reason (s)

.....

 ...

Week twenty

four.....

22. Did you attend any antenatal care when you were pregnant with your previous child?.....
23. Did anyone discussed feeding your baby with you during pregnancy.....
24. While you were pregnant with your previous baby, did you receive any information about the health benefits of breastfeeding?.....
25. Where did you receive this information?.....
26. How have your friends and family fed their children when they were babies?
- e. Most of them gave formula
 - f. Most of them breastfed
 - g. About half of them formula fed and half breast fed.
 - h. I don't know
27. How were you fed when you were a newborn baby?
- e. Breastfed
 - f. Formula fed
 - g. Breast and formula milk
 - h. I don't know

28. If you had previous children, how did you feed them in the first six months?

	Breast milk only	Formula only	Combination of formula and breast milk
Eldest child			
Second eldest child			
Third eldest child			
Fourth eldest child			

29. Was your baby born in the hospital or at home?
- c. Hospital
 - d. Home
30. On the day that you left hospital or at 48 hours if you had a home birth, what most accurately describe how you fed your baby?
- g. Breast milk

- h. Formula
 - i. Combination of breast and formula
 - j. Expressing breast milk
 - k. My baby was not feeding
 - l. I don't remember.
31. Since your baby was born, have you had any of the following as a result of breastfeeding?
- f. Mastitis (inflammation of the breast tissue)
 - g. Thrush
 - h. Nipple pain
 - i. None of the above
 - j. Others specify.....
32. Who or what helped you most to continue breastfeeding?
- j. Own experience
 - k. Friends/ other mothers
 - l. Mother in law
 - m. Other relatives
 - n. Health professional (Nurses/Doctors)
 - o. Peer or support groups
 - p. Voluntary organizations
 - q. Books/ magazine/TV
 - r. Others (please specify).....
33. Who or what helped you least to continue breastfeeding?
- j. Own experience
 - k. Friends/ other mothers
 - l. Mother in law
 - m. Other relatives
 - n. Health professional (Nurses/Doctors)
 - o. Peer or support groups
 - p. Voluntary organizations
 - q. Books/ magazine/TV
 - r. Others (please specify).....

34. Who or what influenced you to stop breastfeeding?
- j. Own experience
 - k. Friends/ other mothers
 - l. Mother in law
 - m. Other relatives
 - n. Health professional (Nurses/Doctors)
 - o. Peer or support groups
 - p. Voluntary organizations
 - q. Books/ magazine/TV
 - r. Others (please specify).....
 -
35. Did you have skin to skin contact with your baby after he/she was born (in the first hour after they were born)?
- d. Yes
 - e. No
 - f. Can't remember
36. If yes, who assisted you?
- h. I was not shown
 - i. Nurse
 - j. Nursing/medical student
 - k. Friends /relative
 - l. Doctor
 - m. Ward attendants
 - n. Others (please specify).....
 -
37. Did they stay with you while you were breastfeeding?
- f. I was not shown
 - g. Stayed the whole time until the baby was asleep
 - h. Left once the baby was feeding but came back to check on you
 - i. Left once the baby was feeding and did not come back to check on you
 - j. Left before the baby had started feeding.
38. How useful did you find this help?

- f. I was not given any help at all at this time
 - g. Extremely useful
 - h. Very useful
 - i. Not very useful
 - j. Not useful at all.
39. Were there problems breastfeeding your baby in the early days?
- c. Yes
 - d. No
- if yes what were
they.....
.....
.....
.....
40. Did anyone give you help with problem (difficulty with breastfeeding) in the early days?
- g. I didn't have any problem
 - h. Nurse helped me
 - i. Doctor helped me
 - j. Friend/ relative helped me.
 - k. Members of local support group helped me.
 - l. Others (please specify).....
41. After you left the hospital, did you receive any home visit from any of the following?
- e. Nurse
 - f. Doctor
 - g. No visit in the first two weeks
 - h. Others (please
specify).....
- If you receive visit, how many did you receive.....
42. Were you given information about any of the following to help with breastfeeding after you went home?
- d. I was not given any information about support services
 - e. Community breastfeeding support group

- f. Others (please specify).....
.....
43. How easy was it for you to find breastfeeding support services?
- e. I did not seek any support services
 - f. Easy
 - g. Difficult
 - h. I was unable to access support services.
44. How do you intend to feed the baby you are pregnant with?
- d. Breast milk
 - e. Formula
 - f. Combination of breast and formula
45. Why will you feed your baby this way?.....
.....
...
.....
.....
.....
.....
46. How long do you intend to feed this baby with breast milk only.....
47. Why.....
.....
.....
48. At what age of your baby will you stop breastfeeding entirely?.....
49. If you are aware of the benefits of breast feeding for the baby, please write them below.....
.....
.....

.....
.....
.....
.....

50. If you are aware of the benefits of formula feeding for the baby, please write them below

.....
.....
.....
.....

51. Have you ever seen an advertisement on television, radio or in a magazine or elsewhere for breastfeeding?.....

52. Have you ever seen an advertisement on television, radio or in a magazine or elsewhere for infant formula?

.....
.....
.....

53. Thinking about the most helpful information you received about breast feeding since your baby was born, who or what had the most impact on you?

k. Own experience

l. Friends/other mothers

m. Partner

n. Your mother

o. Mother-in-law

p. Sisters

q. Other relatives

r. Health professionals

s. Books and magazines

t. Others (please specify).....
.....

54. Since your baby was born, have you ever feed him/her in a public place

- e. No-I never fed in a public place.
 - f. Yes-Breastfed in a public place
 - g. Yes-bottle fed infant formula in a public place
 - h. Yes – bottle fed expressed breast milk.
55. Have you ever had problems finding somewhere to breastfeed your baby in a public place?.....
56. Have you ever been stopped or made to feel uncomfortable about breastfeeding in a public place?.....
57. Which of the following best describes breastfeeding your baby?
- d. I would like to have breastfeed for longer
 - e. I breastfed for as long as I intended
 - f. I had breastfed for longer than I had intended
58. For how long (in months or years) did you breast feed your previous baby?.....
59. If you planned to and started breastfeeding, what were your reasons for stopping breastfeeding?.....
-
-
-
- ...

SECTION C EMPLOYEMENT.

60. What is the occupation of the baby's father?.....
61. Were you working when you had your previous baby?.....
62. How many hours were you working in a day when you had your previous child?.....
63. How old was your baby when you returned to work?.....
64. What arrangements (if any) did you make regarding the care of your baby when you are at work?.....
-
-
- ...
-
65. How would you describe your main employment status just before you had your baby?
- h. Working for payment or profit

- i. Looking for first Job
 - j. Unemployed
 - k. Student or pupil
 - l. Looking after home/family
 - m. Unable to work due to permanent sickness/disability.
 - n. Others (please specify).....
66. Did (do) you work as an employee or are (were) you self-employed in your main Job?
- f. Employee
 - g. Self employed, with paid employee
 - h. Self employed, without paid employee
 - i. Assisting relative/ others (not receiving a fixed wage or salary)
 - j. Looking after home / family.
67. Does your employer provide facilities at work for you to express milk or breastfeed your baby if you want to?
- e. Yes-to express milk
 - f. Yes to breastfeed
 - g. No- neither
 - h. Not applicable”

REF-desktop/draft5/002

Appendix 12: Questionnaire B- Initial Hausa version

**TAMBAYOYI DON SAMUN RA'AYOYIN MATA GAME DA YANDA ZA SU
SHAYAS DA YARAN DA ZA SU HAIFA DA MADARAN MAMA (NONO) DA KUMA
YAN DA SUKA SHAYAS A BAYA A JIHAR PLATO NA NIJERIYA**

KA'IDODI

- In kin taba haifan yanbiyu ko fiye da haka, ki ansa wadannan tambayoyin a madadin yaron da aka haifa na farko
- A wasu wurare za'a bukaci ki rubuta lambobi, sai a rubuta lambobin ba kalmomi ba
- A wasu wurare kuma za'a bukaci ki yi rubutu a kalmomin ki
- A tambayoyin da ke da daman zabe daga wasu jerin ansoshi, sai ki nuna ansan ki ta wurin wannan alama (✓) ko a zana a kan ansan da ya dace da ra'ayin ki. (Lura, za ki cire ansa daya ne tak daga jerin ansoshin).
- Ana roko da a yi gaskiya cikin ansan tambayoyin

Sashe na A: Sani game da mai cikawa

1. Shekaru
2. Cikin ki sati nawa ne?.....
3. Aihuwan da ki ka yi kamin wanan, kin aife da daya ne ko tagwaye ko fiye ne?
 - a. Da daya
 - b. Yara biyu
 - c. Yara uku
4. Wanne makaranta mafi girma kin yi?
 - i. Ba makarantan boko
 - j. Firamari
 - k. Sakandari
 - l. Makaranta gaba da sakandari
5. Kasancewa da Aure?
 - e. Ba aure
 - f. Da aure
6. 'Yaya nawa ki ke da su?
7. Menene aikin ki?.....
8. Menene a takaice abin biyan bukata da ke shigowa cikin gida a wata?

- k. Kasa da N20,000
- l. N20, 000 zuwa N40,000
- m. N41,000 zuwa N 80,000
- n. N81,000 zuwa N120,000
- o. Sama da N120, 000

Sashe na B: Gudanas da shayaswa da nono da kuma abubuwan da sun shafe yin haka.

9. Yin tunani kan haihuwa, wanne irin haihuwa ki ka yi?
 - i. Irin da aka saba bisa ga tsarin mutumtaka
 - j. Ta wurin na'uran forceps – wato abin da zai rike yaron ya fitar
 - k. Ta wurin cire yaro da inji
 - l. Ta wurin yanka
10. A lokacin nakuda, wanne irin maganin kashe zafi kika yi amfani da shi, in akwai?
 - o. Aluran kashin baya
 - p. Pethidine
 - q. Iskan shekawa
 - r. Maganin kashe zafi da an saba bayarwa
 - s. Ruwa
 - t. Babu kome ko kadan
 - u. Wasu (sai a fada wanne)
11. Menene nauyin yaron ki a lokacin haihuwa. Sai a fada haka bisa ga ma'aunin kilograms.....
12. Kafin haihuwan yaron ki na karshe, wanne shiri ki ka yi don ciyar da yaron a watani shidda na farko?
 - i. Madaran mama (nono)
 - j. Madaran yara da aka harhada
 - k. Madaran mama da kuma madaran yara da aka harhada
 - l. Ban yi wata shiri ba
13. Me ya sa ki ka yi tunanin ciyar da yaron ki ta wannan hanya? Sai a rubuta duka dalilan

-
-
-
-
-
-
14. A wanne lokaci ne kin fara ciyar da yaron ki?
- i. Kasa da minti 30
 - j. Tsakanin minti 30 da sa'a 1
 - k. Tsakanin sa'a 1 da sa'o'i 4
 - l. Fiye da sa'o'i hudu bayan haihuwa
15. Wanne irin abinci ne yaron ki ya ci a farkon ciyaswa?
- g. Madaran mama (nono)
 - h. Madaran yara da aka harhada
 - i. Wasu (sai a fada wanne).....
16. Menene girman yaron ki ko kuma a wanne shekara ne kika fara gabatar wa yaron wani abinci banda madaran mama (nono)
17. Menene babban dalilin da ya sa ki ka zabi wannan hanyan ciyas the yaron?
-
-
-
-
-
18. Idan kin ciyas da yaron ki da ruwa ko madaran da aka harhada ban da madaran mama a kwanakin farko na shayaswa da nono, kin yi haka ne don an baki shawara ne ko kuma don kin dai so yaron ki ya yi haka ne?
- g. An bani shawara in bada koma menene
 - h. Na so ne in ba wa yaro na wani abu dabam
 - i. Na ba wa yarona madaran mama (nono) ne kawai a kwanakin farko.
19. Ko akwai wasu matsaloli da shayasda da yaro ta wurin madaran mama (nono) a kwanakin farko?
- in haka ne, menene matsalolin
-

.....

.....

.....

.....

.....

.....

20. Wanne a cikin jerin nan ya bayana da kyau ciyaswan yaron ki a sati daya (1), sati shidda (6), sati goma sha biyu (12) da kuma sati ashirin da huɗu (24). (Sai a nuna alaman nan (✓) a inda ya cancanta. Za’ a nuna alaman nan a wuri daya ne kachal a layin kowane tambaya, kuma za’ a kasance da alaman nan guda huɗu ne duka).

	Sati 1	Sati 6	Sati 12	Sati 24
Madaran mama kawai				
Madaran yara da aka harhada				
Madaran mama tare da madaran yara da aka harhada				

21. Menene dalilan ciyas da yaron ki ta hanyan nan?

Dalilai na sati daya

.....

.....

.....

Dalilai na sati

shidda.....

.....

.....

Dalilai na sati goma sha

biyu.....

.....

Sati ashirin da

hudu.....

22. Ko kin dinga zuwa asibiti don bincike da lura a lokacin da kike da cikin yaron ki na yaron baya kafin haihuwa?

23. Ko wani ya tatauna da ke game da ciyas da yaron ki a lokacin da kike da ciki?

24. A lokacin cikin ki na yaron ki a baya, kin karba koyaswa game da amfanin ciyar da yaro da madaran mama (nono)?

25. A ina ki ka sami wannan koyaswa?

26. Ta yaya abokai da iyali suka ciyas da 'ya'yansu a lokacin da suke jarirai?

i. Da yawan su sun basu madaran yara da aka harhada

j. Da yawan su sun bada madaran mama (nono)

k. Kusan rabin su sun mora madaran yara da aka harhada sai kusan rabi suka ba da madaran mama (nono)

l. Ban sani ba

27. Ta wanne hanya aka ciyar da ke a lokacin da kike jaririya?

i. Madaran mama (nono)

j. Madaran yara da aka harhada

k. Madaran mama da madaran yara da ka harhada

l. Ban sani ba

28. Idan kina da yara can baya, ta yaya kika ciyas da su a watani shidda na farko?

	Madaran mama kawai	Madaran yara da aka harhada kawai	Madaran yara da aka harhada tare da madaran mama
Yaya a cikin yaran			
Yaro na biyu			
Yaro na uku			
Yaro na hudu			

29. An haife yaron ki a asibiti ne ko a gida?

e. Asibiti

f. Gida

30. A ranan da ki ka bar asibiti ko kuma bayan sa'o'i 48 idan kin haihu a gida, wannene ya bayana da kyau yanda kika ciyar da yaron ki?
- m. Madaran mama (nono)
 - n. Mdaran yara da aka harhada
 - o. Madaran mama tare da madaran yara da aka harhada
 - p. Matsatsen madaran mama (nono)
 - q. Yaro bai yi ta ci ba
 - r. Ban tuna ba
31. Tun da kin haife yaron ki, ko kin ta samun wadannan ta dalilin shayas da yaron ta wurin madaran mama (nono)
- k. Kumburan nono
 - l. Wasu irin fitarwa da kaikayi
 - m. Zafi a bakin nono
 - n. Babu ko daya daga cikin abubuwan da aka ambata a sama
 - o. Wasu, a fada wanne
32. Wanane ko kuma menene ya taimake ki don ki ci gaba da shayas da yaro da madaran mama (nono)?
- s. Sanin kaina
 - t. Abokai da wasu uwaye
 - u. Maman maigidana
 - v. Wasu dangi
 - w. Masanan kimiya ta fannin lafiya (masu lura da mutane a asibiti da likitoci)
 - x. Tsara da kungiyoyin taimako
 - y. Kungiyoyin da sun tashi don kansu
 - z. Takardu/jaridu/talabijan
 - aa. Wasu (sai a fada wanne).....
33. Wannene ko menene ya taimake ki kalila don cin gaban shayaswa da madaran mama (nono)?
- a. Sanin kaina
 - b. Abokai da wasu uwaye
 - c. Maman maigidana
 - d. Wasu dangi
 - e. Masanan kimiya ta fannin lafiya (masu lura da mutane a asibiti da likitoci)
 - f. Tsara da kungiyoyin taimako

- g. Kungiyoyin da sun tashi don kansu
 - h. Takardu/jaridu/talabijan
 - i. Wasu (sai a fada wanne).....
34. Wanene ko menene ya shafe ki don ki daina shayaswa da madaran mama (nono)?
- a. Sanin kaina
 - b. Abokai da wasu uwaye
 - c. Maman maigidana
 - d. Wasu dangi
 - e. Masanan kimiya ta fannin lafiya (masu lura da mutane a asibiti da likitoci)
 - f. Tsara da kungiyoyin taimako
 - g. Kungiyoyin da sun tashi don kansu
 - h. Takardu/jaridu/talabijan
 - i. Wasu (sai a fada wanne).....
35. Ko kun hadu fata da fata da yaron ki bayan an haife shi/ta (a sa'a na farko bayan haihuwan)?
- g. I
 - h. A'a
 - i. Ban tuna ba
36. Idan i ne, wanene ya taimake ki?
- o. Ba a nuna mini ba
 - p. Ma' aikatan jinya
 - q. Dalibai na fanin masu lura da mutane a asibiti da likitoci
 - r. Abokai da dangi
 - s. Likita
 - t. Masu hidima a dakunan asibiti
 - u. Wasu (a fada wanne)
 -
37. Sun kasance da ke a lokacin da kike shayaswa da madaran mama (nono)?
- k. Ba a nuna mini ba
 - l. An tsaya dukan lokaci har sai da yaron ya yi baarci
 - m. An tafi lokacin da ake shayas da yaron amma an dawo don a dube ki
 - n. An tafi lokacin da ake shayas da yaron amma ba a dawo a dube ki ba
 - o. An tafi kafin yaron ya fara ci
38. Ta yaya kin same taimakon nan da amfani?

- k. Ba a bani wani taimako ba a wannan lokaci
 - l. Da amfani matuka
 - m. Da amfani sosai
 - n. Ba amfani sosai
 - o. Babu amfani gaba daya
39. Kin same matsaloli da shayas da yaronki da nono a kwanakin farko?
- e. I
 - f. A'a
- Idan i, menene su.....
-
-
-
-
-
-
40. Ko wani ya baki taimako bisa ga matsalar (matsala da shayaswa da nono) a kwanakin farko?
- m. Ban samu wata matsala ba
 - n. Mai lura da mutane a asibiti ta/ya taimake ni
 - o. Likita ya/ta taimake ni
 - p. Aboki/dangi ya/ta taimake ni
 - q. Membobin kungiyar taimakon juna sun taimake ni
 - r. Wasu (a fada wanne).....
41. Bayan kin bar asibiti, ko kin sami wata ziyara daga daya daga cikin wadannan?
- i. Ma'aikatan jinya
 - j. Likita
 - k. Babu ziyara a makoni biyu na farko
 - l. Wasu (a fada wanne).....
- Idan kin sami ziyara, guda nawa kika samu
42. Ko an ba ki bayani game da wadannan don taimako game da shayaswa da nono bayan kin tafi gida?
- g. An bani bayani game da samun taimako
 - h. Kungiyar taimakon juna na gari (al'umma)

- i. Wasu (a fada wanne)
.....
43. Ta yaya ya kasance maki da sauki ki sami taimako game da shayaswa da nono?
- i. Ban nemi wani taimako ba
j. Da sauki
k. Da wuya
l. Ban iya samun taimako ba
44. Ta yaya kike shirin ciyar da jaririn da kike da cikin sa?
- g. Madaran mama (nono)
h. Madaran yara da aka harhada
i. Madaran mama tare da madaran yara da aka harhada
45. Menene dalilin da zaki ciyar da yaron ki ta wannan hanya?
.....
.....
.....
.....
.....
.....
.....
.....
46. Zuwa wanne tsawon lokaci kike shirin ciyar da yaron da madaran mama (nono) kawai
.....
47. Don
menene.....
.....
.....
.....
48. A wanne shekara zaki daina ciyar da yaronki da madaran mama (nono)?
.....
49. Idan kin san amfanin ciyar da yaro da madaran mama (nono), sai ki rubuta a nan
.....
.....
.....

.....
.....
.....
.....

50. Idan kin san amfanin ciyar da yaro da madaran yara da aka harhada, sai ki rubuta a nan

.....
.....
.....
.....
.....

51. Ko kin taba ganin talle a talabijan, rediyo ko a jarida ko a ko'ina game da shayaswa da madaran mama (nono)?

.....
.....

52. Ko kin taba ganin talle a talabijan, rediyo ko a jarida ko a ko'ina game da madaran yara da aka harhada?

.....
.....
.....

53. Yin tunani akan bayani mafi taimako da kin samu game da shayaswa da mdaran mama (nono) tun haihuwan yaronki, wanene ko menene ya shafe ki sosai?

- u. Sanin kaina
- v. Abokai da wasu uwaye
- w. Maigida
- x. Mama na
- y. Maman maigidana
- z. 'Yan'uwa mata
- aa. Wasu dangi
- bb. Masanan kiwon lafiya
- cc. Takardu da jaridu
- dd. Wasu (a fada wanne)

.....

54. Tun haihuwan yaronki, kin taba shayas da shi/ita a wurin da ke kasance da mutane?
- i. A'a – bana shayas a wurin da ke kasance da mutane
 - j. I – na shayas da yaro a wurin da ke kasance da mutane
 - k. I – na shayas da yaro da madaran yara da aka harhada a wurin da ke kasance da mutane
 - l. I – na shayas da yaro da matsatsen madaran nono
55. Kin taba samun matsala neman wurin da zaki shayas da yaro da nono a wurin da ke kasance da mutane?
56. Ko an taba tsayar da ke ko a sa ki rasa sakewa game da shayas da yaro a wurin da ke kasance da mutane? ...
57. Wanne a cikin wadannan ya bayana da kyau game da shayas da yaron ki da madaran mama (nono)?
- g. Zan so da na shayas da yaro da nono na tsawon lokaci
 - h. Na shayas da yaro da nono a tsawon lokacin da na shirya
 - i. Na shayas da yaro da nono fiye da tsawon lokacin da na shirya
58. Menene tsawon lokacin da (a watani ko shekaru) ki ka shayas da yaronki na baya da madaran mama (nono)?
59. Idan kin shirya kuma kin fara shayaswa da madaran mama (nono), wadanne dalilai ne suka sa kin daina?
-
-
-
-
-

Sashe na C: Game da Aiki

60. Menene aikin mahaifin yaron?
61. Ko kina aiki a lokacin da ki ka haife yaron ki na baya?
62. Sa'o'i nawa ne kin yi ta aiki a rana lokacin da ki ka haife yaron ki na baya?
63. Menene shakarun yaron ki a lokacin da ki ka koma aiki?
64. Wadanne shiri (in akwai) ki ka yi don kula da yaron ki lokacin da ki na wurin aiki?
-
-
-

.....
.....
.....
.....
.....

65. Ta yaya zaki bayana aikin ki kafin kin haife yaron ki?
- o. Aiki don a biya ni ko in sami riba
 - p. Neman aiki na na farko
 - q. Ba ni da aiki
 - r. Dalibi
 - s. Lura da gida/iyali
 - t. Rashin iya yin aiki don daddaden cuta/nakasa
 - u. Wasu (a fada wanne)
66. Kin yi (ko kina yi) aiki a kalkashin wani ko kin yi (ko kina yi) aiki na kanki?
- k. Aiki kalkashin wani
 - l. Aikin kaina, da ma'aikata da nake biya a kalkashi na
 - m. Aikin kaina, babu ma'aikata da nake biya a kalkashina
 - n. Taimakon dangi/wasu (bana karban tsararen albashi)
 - o. Lura da gida/iyali
67. Ko mai baki aiki ya tanada ma ki kayan aiki don matse nono ko kuma shayaswa da yaron ki da nono idan kina son yin haka?
- i. I – in matsa nono
 - j. I – in shayas da yaro da nono
 - k. A'a – babu ko daya
 - l. Bai shafe ni ba

Appendix 13 Questionnaire C- Reverse translated version

Questionnaire on mothers' decision on how they have planned to breastfeed their children and how they have practiced infant feeding in plateau state Nigeria.

Instructions

If you have had twins or more, you are expected to answer the question based on your first baby's experience.

You will be expected to write numbers in some places instead of words.

Where options are given, you are expected to tick (✓) the answer (choose only one option)

We plead with you to be as objective as possible in answering the questions

Section A

1. Age-----
2. How many weeks is your pregnancy?
3. In your previous pregnancy, did you have a single child, twins (or more)?
 - g. Single birth
 - h. Twins
 - i. More than two
4. Highest education attended
 - a. No formal education
 - b. Primary school
 - c. Secondary school
 - d. Post secondary school
5. Marital status
 - a. Single
 - b. Married
6. How many children do you have?
7. What is your occupation?
8. What is your family's monthly income
 - a. Below N20,000
 - b. N20,000 to N40,000

- c. N41,000-N80,000
- d. N81,000- N120,000
- e. Above N120,000

Section B: breastfeeding and related issues

9. Thinking about delivery, what type of delivery did you undergo?
 - a. The usual or normal delivery
 - b. Through the use of forceps
 - c. Delivery through machine
 - d. Delivery through caesarean session
10. During labour, what type of analgesia was given to you if any?
 - a. Injection through the spinal cord
 - b. Pethidine
 - c. Oxygen
 - d. Normal analgesia
 - e. Water
 - f. Nothing at all
 - g. Other (list)
11. What was the weight of your baby at delivery in kilograms?
12. Before the delivery, of your last child, what was your plan on feeding for the first six months?
 - a. Breast milk
 - b. Formula milk
 - c. Breast milk and formula milk
 - d. No plan at all.
13. Why did you plan to feed your baby that way?.....
14. At what time interval did you feed your child?.....
 - a. Less than 30 mins
 - b. Between 30 minute to 1 hour
 - c. Between 1 hour to four
 - d. More than four hours
15. What type of food did you first administer to your child?
 - a. Breast milk
 - b. Formula milk

c. Others (list)

16. At what age did you start administering other foods to your child aside the breast milk?

17. Why did you choose the method above?

18. If you feed your child with water or formula milk in the first day, did you do that because you were advised or you wanted your baby to feed that way?

a. I was advised to give anything

b. I wanted to give my baby something different

c. I gave my baby breast milk only in the early days

19. Do you have issue breastfeeding your child in the early days of delivery?.....if yes, what are the issues?

20. Which of these explains exactly how you fed your child at week 1, week 6, week 12 and week 24. (Show by ticking (✓) in the box that best explains your infant feeding and tick only an option in each of four column.

	Week 1	Week 6	Week 12	Week 24
Exclusive breast feeding				
Formula milk				
Breast milk and formula milk				

21. What was the reason for feeding your child that way?

Reasons for week 1.....

Reasons for week 6.....

Reasons for week 12.....

Reasons for week 24.....

22. Have you attended any antenatal for the child you had previously?

23. Did anyone discuss any method of feeding your child while you were pregnant?

24. During the pregnancy of your last child, were you given any teaching on exclusive breastfeeding?

25. Where did you receive the teaching?

26. How were your neighbours and friends children feed while they were infants?

a. Many of them administered formula milk

b. Many of them administered breast milk

c. Half administered formulated milk and half administered breast milk.

d. I don't know

27. How were you fed as an infant?

- a. Breast milk
- b. Formula milk
- c. Breast milk and formula milk
- d. I don't know

28. If you had kids in time past, how did you feed them in the first 6 months.

	Breast milk only	Formula milk	Breast milk and formula
First child			
Second child			
Third child			
Forth child			

29. Was your child delivered at the hospital or at home?

- a. Hospital
- b. Home

30. The day you left hospital, or after 48 hours of delivery at home, which of these explains appropriately how you fed your child?

- a. Breast milk
- b. Formula milk
- c. Breast milk and formula milk
- d. Bottled breast milk
- e. Child not matured to feed
- f. I can't remember.

31. Since you gave birth to your child, did you have any of the following?

- a. Breast swelling
- b. Rashes with itching
- c. Pain on the nipple
- d. None of the above
- e. Others (explain)

32. Who or what helped you to continue breastfeeding?

- a. Personal knowledge
- b. Friends and other mothers

- c. My mother in-law
 - d. Relatives
 - e. Health professionals
 - f. Peers and organizations
 - g. Nongovernmental organization
 - h. Television/ radio/ news paper/books
 - i. Others (list)
33. Who or what helped you a little to persist in breastfeeding?
- a. Personal knowledge
 - b. Friends and other mothers
 - c. My mother in-law
 - d. Relatives
 - e. Health professionals
 - f. Peers and organizations
 - g. Nongovernmental organization
 - h. Television/ radio/ news paper/books
 - i. Others (list)
34. Who or what make you stop breast feeding?
- a. Personal knowledge
 - b. Friends and other mothers
 - c. My mother in-law
 - d. Relatives
 - e. Health professionals
 - f. Peers and organizations
 - g. Nongovernmental organization
 - h. Television/ radio/ news paper/books
 - i. Others (list)
35. Did you make any physical contact with your child in the first hour after delivery?
- a. Yes
 - b. No
 - c. I can't remember
36. If yes, who helped you?
- a. I was not shown

- b. A health professional
- c. Students nurses/doctors
- d. Friends and relatives
- e. Doctor
- f. Nurses /midwife
- g. Others (explain)

37. Did they stay with you during breastfeeding?

- a. They did not show me
- b. They stayed until the child slept
- c. They left while I was breastfeeding but later came back to check on me.
- d. They left while I was breastfeeding and never came back.
- e. They left before the child started feeding.

38. Did you find that help useful?

- a. No help was given to me
- b. It was quite useful
- c. It was useful
- d. It was not quite useful
- e. It was not useful at all

39. Was there any problem breastfeeding your child in the early days of delivery?

- a. Yes
- b. No

If yes, what are they.....

40. Did anyone render help to you in the early days?

- a. There was no problem at all
- b. The nurse on duty helped me
- c. The Doctor
- d. A friend/ relation helped me
- e. Member of a help organization
- f. Other

41. Who among the following visited you after you left the hospital?

- a. A nurse
- b. Doctor
- c. No visitation in the first two weeks

- d. Others
 - If at all you are visited, how many times was it.....
- 42. Who instructed you on how to breastfeed your baby before you left hospital?
 - a. I was not instructed on how to get help
 - b. A support organization
 - c. Others (specify
- 43. How easy was it for you to get information on breast feeding.
 - a. I did not look for any help
 - b. It was easy
 - c. It was hard
 - d. I could not get any help
- 44. How do you plan to feed the baby you are pregnant with?
 - a. Breast milk
 - b. Formula milk
 - c. Breast milk and formula milk
- 45. Why do you want to feed your baby this way?
 -
- 46. How long do you want to breastfeed your baby exclusively with breast milk?
- 47. Why ?.....
 -
 -
- 48. At what age will you stop breastfeeding your baby?.....
 -
 -
- 49. What are the benefits of breastfeeding your baby?.....
- 50. What are the benefits of feeding your baby with formula milk?.....
- 51. Have you ever seen any advert on the television, radio or newspaper on breastfeeding?.....
- 52. Have you ever seen any advert on the television, radio or newspaper on formula feeding?.....
- 53. Can you think of any help that was so important to you on breastfeeding since the delivery of your baby? Who or what really affected you most?
 - a. Personal knowledge
 - b. Friends and some parents

- c. My husband
 - d. My mother
 - e. My mother in-law
 - f. Female relation
 - g. Some relations
 - h. Health practitioners
 - i. Books and newspapers
 - j. Others.....
54. Have you ever breastfeed your baby in public?
- a. No, I don't breastfeed my baby in public
 - b. Yes, I breastfeed my baby in public
 - c. Yes, I feed my baby with formula milk in public
 - d. Yes, I feed my baby with breast milk using a feeder.
55. Have you ever had an issue finding a place to breastfeed your baby in a public place?
.....
56. Have you ever been stopped or felt uncomfortable breastfeeding in public?.....
57. Which of the following explains your baby's experience with breastfeeding?
- a. I would like to breastfeed my baby for a very longer time.
 - b. I breastfeed my child for as long as I plan.
 - c. I breastfeed my child for a period longer than I planned.
58. How long did you breastfeed your previous baby?.....
59. What were the reasons that made you stopped breastfeeding?.....

Section c

60. What is the occupation of your baby's Dad?
.....
61. Were you working when you gave birth to your baby?.....
62. How many hours of work did you put in when nursing your baby?
63. How old was your baby when you resume work?.....
64. What arrangement did you put in place to take care of your child before you resume work?
65. How will you describe your commitment to work before delivery?
- a. I was working for pay
 - b. Looking for my first job

- c. I was not working
 - d. I was a student
 - e. House wife
 - f. Unable to work due to sickness/disability
 - g. Others (specify).....
66. Have you worked or are you working under anyone?
- a. I work under someone
 - b. I have a business with workers under me that I pay
 - c. Business with no one under me
 - d. I assist relations with no stipulated pay
 - e. I am a house wife
67. Does your employer allows you breastfeed or provided a place for you to breastfeed or express breast milk during work?
- a. Yes, I give my baby bottled breast milk
 - b. Yes, I breastfeed my baby directly
 - c. No, none of the above
 - d. It does not affect me at all.

Appendix 14: Questionnaire D-Final Hausa version

**TAMBAYOYI DON SAMUN RA'AYOYIN MATA GAME DA YANDA ZA SU
SHAYAS DA YARAN DA ZA SU HAIFA DA MADARAN MAMA (NONO) DA KUMA
YAN DA SUKA SHAYAS A BAYA A JIHAR PLATO NA NIJERIYA**

KA'IDODI

- In kin taba haifan yanbiyu ko fiye da haka, ki ansa wadannan tambayoyin a madadin yaron da aka haifa na farko
- A wasu wurare za'a bukaci ki rubuta lambobi, sai a rubuta lambobin ba kalmomi ba
- A wasu wurare kuma za'a bukaci ki yi rubutu a kalmomin ki
- A tambayoyin da ke da daman zabe daga wasu jerin ansoshi, sai ki nuna ansan ki ta wurin wannan alama (✓) ko a zana a kan ansan da ya dace da ra'ayin ki. (Lura, za ki cire ansa daya ne tak daga jerin ansoshin).
- Ana roko da a yi gaskiya cikin ansan tambayoyin

Sashe na A: Sani game da mai cikawa

1. Shekaru
2. Cikin ki sati nawa ne?.....
3. Aihuwan da ki ka yi kamin wanan, kin aife da daya ne ko tagwaye ko fiye ne?
 - d. Da daya
 - e. Yara biyu
 - f. Yara uku
4. Wanne makaranta mafi girma kin yi?
 - m. Ba makarantan boko
 - n. Firamari
 - o. Sakandari
 - p. Makaranta gaba da sakandari
5. Kasancewa da Aure?
 - g. Ba aure
 - h. Da aure
6. 'Yaya nawa ki ke da su?
7. Menene aikin ki?.....
8. Menene a takaice abin biyan bukata da ke shigowa cikin gida a wata?

- p. Kasa da N20,000
- q. N20, 000 zuwa N40,000
- r. N41,000 zuwa N 80,000
- s. N81,000 zuwa N120,000
- t. Sama da N120, 000

Sashe na B: Gudanas da shayaswa da nono da kuma abubuwan da sun shafe yin haka.

9. Yin tunani kan haihuwa, wanne irin haihuwa ki ka yi?
 - m. Irin da aka saba bisa ga tsarin mutumtaka
 - n. Ta wurin na'uran forceps – wato abin da zai rike yaron ya fitar
 - o. Ta wurin cire yaro da inji
 - p. Ta wurin yanka
10. A lokacin nakuda, wanne irin maganin kashe zafi kika yi amfani da shi, in akwai?
 - v. Aluran kashin baya
 - w. Pethidine
 - x. Iskan shekawa
 - y. Maganin sa barci.
 - z. Ruwa
 - aa. Babu kome ko kadan
 - bb. Wasu (sai a fada wanne)
11. Menene nauyin yaron ki a lokacin haihuwa. Sai a fada haka bisa ga ma'aunin kilograms.....
12. Kafin haihuwan yaron ki na karshe, wanne shiri ki ka yi don ciyar da yaron a watani shidda na farko?
 - m. Madaran mama (nono)
 - n. Madaran yara da aka harhada
 - o. Madaran mama da kuma madaran yara da aka harhada
 - p. Ban yi wata shiri ba
13. Me ya sa ki ka yi tunanin ciyar da yaron ki ta wannan hanya? Sai a rubuta duka dalilan

-
-
-
-
-
-
14. A wanne lokaci ne kin fara ciyar da yaron ki bayan haihuwa?
- m. Kasa da minti 30
 - n. Tsakanin minti 30 da sa'a 1
 - o. Tsakanin sa'a 1 da sa'o'i 4
 - p. Fiye da sa'o'i hudu bayan haihuwa
15. Wanne irin abinci ne yaron ki ya ci a farkon ciyaswa?
- j. Madaran mama (nono)
 - k. Madaran yara da aka harhada
 - l. Wasu (sai a fada wanne).....
16. Menene girman yaron ki ko kuma a wanne shekara ne kika fara gabatar wa yaron wani abinci banda madaran mama (nono)
17. Menene babban dalilin da ya sa ki ka zabi wannan hanyan ciyas the yaron?
-
-
18. Idan kin ciyas da yaron ki da ruwa ko madaran da aka harhada ban da madaran mama a kwanakin farko na shayaswa da nono, kin yi haka ne don an baki shawara ne ko kuma don kin dai so yaron ki ya yi haka ne?
- j. An bani shawara in bada koma menene
 - k. Na so ne in ba wa yaro na wani abu dabam
 - l. Na ba wa yarona madaran mama (nono) ne kawai a kwanakin farko.
19. Ko akwai wasu matsaloli da shayasda da yaro ta wurin madaran mama (nono) a kwanakin farko?
- in haka ne, menene matsalolin
-
-
-

20. Wanne a cikin jerin nan ya bayana da kyau ciyaswan yaron ki a sati daya (1), sati shidda (6), sati goma sha biyu (12) da kuma sati ashirin da hudu (24). (Sai a nuna alaman nan (✓) a inda ya cancanta. Za'a nuna alaman nan a wuri daya ne kachal a layin kowane tambaya, kuma za'a kasance da alaman nan guda hudu ne duka).

	Sati 1	Sati 6	Sati 12	Sati 24
Madaran mama kawai				
Madaran yara da aka harhada				
Madaran mama tare da madaran yara da aka harhada				

21. Menene dalilan ciyas da yaron ki ta hanyan nan?

Dalilai na sati daya

.....

Dalilai na sati

shidda.....

Dalilai na sati goma sha

biyu.....

Sati ashirin da

hudu.....

22. Ko kin dinga zuwa asibiti don bincike da lura a lokacin da kike da cikin yaron ki na yaron baya kafin haihuwa?

23. Ko wani ya tatauna da ke game da ciyas da yaron ki a lokacin da kike da ciki?

.....

24. A lokacin cikin ki na yaron ki a baya, kin karba koyaswa game da amfanin ciyar da yaro da madaran mama (nono)?
25. A ina ki ka sami wannan koyaswa?
26. Ta yaya abokai da iyali suka ciyas da 'ya'yansu a lokacin da suke jarirai?
- m. Da yawan su sun basu madaran yara da aka harhada
 - n. Da yawan su sun bada madaran mama (nono)
 - o. Kusan rabin su sun mora madaran yara da aka harhada sai kusan rabi suka ba da madaran mama (nono)
 - p. Ban sani ba
27. Ta wanne hanya aka ciyar da ke a lokacin da kike jaririya?
- m. Madaran mama (nono)
 - n. Madaran yara da aka harhada
 - o. Madaran mama da madaran yara da ka harhada
 - p. Ban sani ba
28. Idan kina da yara can baya, ta yaya kika ciyas da su a watani shidda na farko?

	Madaran mama kawai	Madaran yara da aka harhada kawai	Madaran yara da aka harhada tare da madaran mama
Yaya a cikin yaran			
Yaro na biyu			
Yaro na uku			
Yaro na hudu			

29. An haife yaron ki a asibiti ne ko a gida?
- g. Asibiti
 - h. Gida
30. A ranan da ki ka bar asibiti ko kuma bayan sa'o'i 48 idan kin haihu a gida, wannene ya bayana da kyau yanda kika ciyar da yaron ki?
- s. Madaran mama (nono)
 - t. Mdaran yara da aka harhada
 - u. Madaran mama tare da madaran yara da aka harhada
 - v. Matsatsen madaran mama (nono)
 - w. Yaro bai fara shayaswa ba.
 - x. Ban tuna ba

31. Tun da kin haife yaron ki, ko kin ta samun wadannan ta dalilin shayas da yaron ta wurin madaran mama (nono)
- p. Kumburan nono
 - q. Wasu irin fitarwa da kaikayi
 - r. Zafi a bakin nono
 - s. Babu ko daya daga cikin abubuwan da aka ambata a sama
 - t. Wasu, a fada wanne
32. Wanane ko kuma menene ya taimake ki don ki ci gaba da shayas da yaro da madaran mama (nono)?
- bb. Sanin kaina
 - cc. Abokai da wasu uwaye
 - dd. Maman maigidana
 - ee. Wasu dangi
 - ff. Masanan kimiya ta fannin lafiya (masu lura da mutane a asibiti da likitoci)
 - gg. Tsara da kungiyoyin taimako
 - hh. Kungiyoyin da sun tashi don kansu
 - ii. Takardu/jaridu/talabijan
 - jj. Wasu (sai a fada wanne).....
33. Wannene ko menene ya taimake ki kalila don cin gaban shayaswa da madaran mama (nono)?
- j. Sanin kaina
 - k. Abokai da wasu uwaye
 - l. Maman maigidana
 - m. Wasu dangi
 - n. Masanan kimiya ta fannin lafiya (masu lura da mutane a asibiti da likitoci)
 - o. Tsara da kungiyoyin taimako
 - p. Kungiyoyin da sun tashi don kansu
 - q. Takardu/jaridu/talabijan
 - r. Wasu (sai a fada wanne).....
34. Wanene ko menene ya shafe ki don ki daina shayaswa da madaran mama (nono)?
- j. Sanin kaina
 - k. Abokai da wasu uwaye
 - l. Maman maigidana
 - m. Wasu dangi

- n. Masanan kimiya ta fannin lafiya (masu lura da mutane a asibiti da likitoci)
 - o. Tsara da kungiyoyin taimako
 - p. Kungiyoyin da sun tashi don kansu
 - q. Takardu/jaridu/talabijan
 - r. Wasu (sai a fada wanne).....
35. Ko kun hadu fata da fata da yaron ki bayan an haife shi/ta (a sa'a na farko bayan haihuwan)?
- j. I
 - k. A'a
 - l. Ban tuna ba
36. Idan i ne, wanene ya taimake ki?
- v. Ba a nuna mini ba
 - w. Ma' aikatan jinya
 - x. Dalibai na fanin masu lura da mutane a asibiti da likitoci
 - y. Abokai da dangi
 - z. Likita
 - aa. Masu hidima a dakunan asibiti
 - bb. Wasu (a fada wanne)
.....
37. Sun kasance da ke a lokacin da kike shayaswa da madaran mama (nono)?
- p. Ba a nuna mini ba
 - q. An tsaya dukan lokaci har sai da yaron ya yi baarci
 - r. An tafi lokacin da ake shayas da yaron amma an dawo don a dube ki
 - s. An tafi lokacin da ake shayas da yaron amma ba a dawo a dube ki ba
 - t. An tafi kafin yaron ya fara ci
38. Ta yaya kin same taimakon nan da amfani?
- p. Ba a bani wani taimako ba a wannan lokaci
 - q. Da amfani matuka
 - r. Da amfani sosai
 - s. Ba amfani sosai
 - t. Babu amfani gaba daya
39. Kin same matsaloli da shayas da yaronki da nono a kwanakin farko?
- g. I
 - h. A'a

Idan i, menene su.....

40. Ko wani ya baki taimako bisa ga matsalar (matsala da shayaswa da nono) a kwanakin farko?

- s. Ban samu wata matsala ba
- t. Mai lura da mutane a asibiti ta/ya taimake ni
- u. Likita ya/ta taimake ni
- v. Aboki/dangi ya/ta taimake ni
- w. Membobin kungiyar taimakon juna sun taimake ni
- x. Wasu (a fada wanne).....

41. Bayan kin bar asibiti, ko kin sami wata ziyara daga daya daga cikin wadannan?

- m. Ma'aikatan jinya
- n. Likita
- o. Babu ziyara a makoni biyu na farko
- p. Wasu (a fada wanne).....
- Idan kin sami ziyara, guda nawa kika samu

42. Ko an ba ki bayani game da wadannan don taimako game da shayaswa da nono bayan kin tafi gida?

- j. An bani bayani game da samun taimako
- k. Kungiyar taimakon juna na gari (al'umma)
- l. Wasu (a fada wanne).....

43. Ta yaya ya kasance maki da sauki ki sami taimako game da shayaswa da nono?

- m. Ban nemi wani taimako ba
- n. Da sauki
- o. Da wuya
- p. Ban iya samun taimako ba

44. Ta yaya kike shirin ciyar da jaririn da kike da cikin sa?
- j. Madaran mama (nono)
 - k. Madaran yara da aka harhada
 - l. Madaran mama tare da madaran yara da aka harhada
45. Menene dalilin da zaki ciyar da yaron ki ta wannan hanya?
-
-
46. Zuwa wanne tsawon lokaci kike shirin ciyar da yaron da madaran mama (nono) kawai
47. Don menene.....
-
-
48. A wanne shekara zaki daina ciyar da yaronki da madaran mama (nono)?
-
49. Idan kin san amfanin ciyar da yaro da madaran mama (nono), sai ki rubuta a nan
-
-
-
-
50. Idan kin san amfanin ciyar da yaro da madaran yara da aka harhada, sai ki rubuta a nan
-
-
-
51. Ko kin taba ganin talle a talabijan, rediyo ko a jarida ko a ko'ina game da shayaswa da madaran mama (nono)?
-
-
52. Ko kin taba ganin talle a talabijan, rediyo ko a jarida ko a ko'ina game da madaran yara da aka harhada?
-
-
-
53. Yin tunani akan bayani mafi taimako da kin samu game da shayaswa da mdaran mama (nono) tun haihuwan yaronki, wanene ko menene ya shafe ki sosai?
- ee. Sanin kaina

ff. Abokai da wasu uwaye

gg. Maigida

hh. Mama na

ii. Maman maigidana

jj. 'Yan'uwa mata

kk. Wasu dangi

ll. Masanan kiwon lafiya

mm. Takardu da jaridu

nn. Wasu (a fada wanne)

.....

54. Tun haihuwan yaronki, kin taba shayas da shi/ita a wurin da ke kasance da mutane?

m. A'a – bana shayas a wurin da ke kasance da mutane

n. I – na shayas da yaro a wurin da ke kasance da mutane

o. I – na shayas da yaro da madaran yara da aka harhada a wurin da ke kasance da mutane

p. I – na shayas da yaro da matsatsen madaran nono

55. Kin taba samun matsala neman wurin da zaki shayas da yaro da nono a wurin da ke kasance da mutane?

56. Ko an taba tsayar da ke ko a sa ki rasa sakewa game da shayas da yaro a wurin da ke kasance da mutane? ...

57. Wanne a cikin wadannan ya bayana da kyau game da shayas da yaron ki da madaran mama (nono)?

j. Zan so da na shayas da yaro da nono na tsawon lokaci

k. Na shayas da yaro da nono a tsawon lokacin da na shirya

l. Na shayas da yaro da nono fiye da tsawon lokacin da na shirya

58. Menene tsawon lokacin da (a watani ko shekaru) ki ka shayas da yaronki na baya da madaran mama (nono)?

59. Idan kin shirya kuma kin fara shayaswa da madaran mama (nono), wadanne dalilai ne suka sa kin daina?

.....

.....

Sashe na C: Game da Aiki

60. Menene aikin mahaifin yaron?
61. Ko kina aiki a lokacin da ki ka haife yaron ki na baya?
62. Sa'o'i nawa ne kin yi ta aiki a rana lokacin da ki ka haife yaron ki na baya?
63. Menene shakarun yaron ki a lokacin da ki ka koma aiki?
64. Wadanne shiri (in akwai) ki ka yi don kula da yaron ki lokacin da ki na wurin aiki?

65. Ta yaya zaki bayana aikin ki kafin kin haife yaron ki?
- v. Aiki don a biya ni ko in sami riba
 - w. Neman aiki na na farko
 - x. Ba ni da aiki
 - y. Dalibi
 - z. Lura da gida/iyali
 - aa. Rashin iya yin aiki don daddaden cuta/nakasa
 - bb. Wasu (a fada wanne)
66. Kin yi (ko kina yi) aiki a kalkashin wani ko kin yi (ko kina yi) aiki na kanki?
- p. Aiki kalkashin wani
 - q. Aikin kaina, da ma'aikata da nake biya a kalkashi na
 - r. Aikin kaina, babu ma'aikata da nake biya a kalkashina
 - s. Taimakon dangi/wasu (bana karban tsararen albashi)
 - t. Lura da gida/iyali
67. Ko mai baki aiki ya tanada ma ki kayan aiki don matse nono ko kuma shayaswa da yaron ki da nono idan kina son yin haka?
- m. I – in matsa nono
 - n. I – in shayas da yaro da nono
 - o. A'a – babu ko daya
 - p. Bai shafe ni ba